DOCUMENT RESUME

ED 213 272 HE 012 844

AUTHOR	Abrahamsson, Kenneth; And Others
TITLE	The Value of Work Experience in Higher Education: A Study of Work Experience as a Substitute for Formal Academic Entrance Requirements. Reports on Education and Psychology.
INSTITUTION	Stockholm School of Education (Sweden). Dept. of Educational Research.
REPORT NO	REP-Nr2-1980
PUB DATE	Apr 80
NOTE	140p.; A former version of this report was presented for UNESCO in June 1979. The differences between the two versions are shown in chapter 5.
EDRS PRICE	MF01/PC06 Plus Postage.
DESCRIPTORS	Access to Education; *Admission Criteria; Adult Students; *College Admission; Comparative Education; Educational Policy; Employment Experience; *Experiential Learning; Foreign Countries; Higher Education; Nontraditional Students; *Prior Learning; Student Recruitment; *Work Experience
IDENTIFIERS	Denmark; *Sweden

ABSTRACT

The Swedish policy that work experience can be used as a substitute for formal academic entrance requirements for higher education is assessed. The social and economic background of introducing work experience in higher education policy is described, and the significance of work experience to enrollment patterns and for the form and content of higher education is addressed. The general characteristics of the Swedish admissions system and the effects on recruitment and admissions are outlined. Additionally, the effects of work experience on the educational process are considered from a theoretical viewpoint. Distinctions are made between three different functions of work experience as a ground for admission: work experience as a substitute for upper secondary school education (alternative route) for adults; additional credit in selection for all students; and formal requirement for admission to some study programs. Work experience also is classified as a basis for academic studies according to its content (relevant professional experience, work experience, in general, and life experience). The admissions schemes in Sweden and Denmark are compared, and those found in a few other countries are briefly noted. Some Swedish findings regarding different ways of valuing work experience as an admission criterion are summarized. It is suggested that institutions that are mainly oriented toward traditional groups do not have the same possibilities of using experience as do institutions with an educational design oriented toward nontraditional students. A bibliography is appended. (SW)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

Reports on Education and Psychology
Nr 2 · 1980

ED213272

Kenneth Abrahamsson
Lillemor Kim Kjell Rubenson

The Value of Work Experience in Higher Education

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
Kenneth Abrahamsson
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
✓ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

HE 012 849

Stockholm Institute of Education
Department of Educational Research

THE VALUE OF WORK EXPERIENCE IN HIGHER EDUCATION

-

A STUDY OF WORK EXPERIENCE AS A SUBSTITUTE FOR FORMAL ACADEMIC ENTRANCE REQUIREMENTS

BY

KENNETH ABRAHAMSSON
LILLEMOR KIM
KJELL RUBENSON

STOCKHOLM INSTITUTE OF EDUCATION,
DEPARTMENT OF EDUCATIONAL RESEARCH,
100 26 STOCKHOLM 34, SWEDEN

APRIL 1980

FOREWORD

This report can be seen as the sum of three different approaches to the problem of work experience in higher education. The first approach is more macro-sociologically oriented in its efforts to describe the social and economic background of introducing work experience in higher education policy and into the system itself. The second approach is more descriptive and tries to outline the general characteristics of the Swedish admission system and the results, as far as we know them today, on recruitment and admission. The third approach, finally, discusses on more or less purely theoretical grounds the educational consequences of work experience. It has not been our ambition to integrate the three approaches, rather they represent three different ways of looking at the problem under discussion.

An analysis of work experience in higher education brings to the surface both problems at the policy level and question of methods, quality and criteria at the educational level. As a consequence the study touches upon rather delicate policy questions. Views presented in this discussion are our own and not necessarily those of the National Board of Universities and Colleges in Sweden, which is the administrative platform for the daily duties of two of us.

Finally, it should be mentioned that Jan Löfgren, in charge of the follow-up of the view programs of advanced vocational technology in Sweden (YTH) has contributed to part 4.4.*)

Stockholm in April 1980

Kenneth Abrahamsson Lillemor Kim Kjell Rubenson

---

*) A former version of this report was presented for UNESCO in June 1979. The differences between the two versions are found in chapter 5.

C O N T E N T S

1.	INTRODUCTION	1
2.	WORK EXPERIENCE AND POLICIES OF HIGHER EDUCATION	5
2.1	Motives for taking work experience into consideration	5
2.2	The concept of work experience in higher education	15
2.3	The function of work experience in higher education	21
2.4	Assessment of work experience - some comparative aspects	27
3.	WORK EXPERIENCE IN ADMISSION SCHEMES	35
3.1	The Swedish admission scheme	35
3.2	Comparison of Sweden with Denmark	41
3.3	Admission procedures in diversified higher education systems	45
4.	WORK EXPERIENCE AS A CRITERION FOR ADMISSION TO HIGHER EDUCATION - SOME SWEDISH FINDINGS	48
4.1	Various aspects: enrolment, attitudes and achievement	48
4.2	Pilot programme with the 25/5-rule (1969-77)	50
4.3	The new admission scheme of 1977	65
4.4	Programmes of advanced vocational technology (YTH)	77
5.	THE EFFECTS OF WORK EXPERIENCE ON THE EDUCATIONAL PROCESS - SOME THEORETICAL CONSIDERATIONS	84
5.1	A general framework	84
5.2	The changeable adult learner	87
5.3	Experience as a base for higher studies	90
5.4	Organizational frames and the utilization of work experience	99
5.5	The adaptation to new learners - structural and didactic aspects	105

5.6 Individual and institutional responses to imbalance 114

5.7 Selection, adaptation and the values of higher education 118

6. SUMMARY DISCUSSION 123

REFERENCES 129

1. INTRODUCTION

Problems of access to higher education cannot be dissociated from the evolution of the education system as a whole. On the contrary, it is often the case that the development of higher education is described in terms of 'access'. One example of this is Martin Trow's now so well-known classification 'elite, mass and universal access higher education' (Trow, 1974). Changes in conditions of access play a key role in this respect and the assessment of work-experience as a ground for access is a new and important feature of this development.

In most industrialized countries the composition of student groups has become increasingly heterogeneous during the seventies with respect to age and educational background. This is particularly true of the US and Sweden. But other European countries have also increased their efforts to give adults [1] the opportunity of a higher education. At the same time as higher education is being opened up to these new groups there is a tendency to restrict access to university education, mainly for budgetary reasons, for secondary school certificate holders. Sweden is of interest in this connection, as it is one of the few countries where attempts are being made to evolve a coherent approach within the framework of a fundamental reform of its education to opening post-secondary education to adults (Hecquet et al., 1976). A corner-stone here has been to accord increased value to work experience as a ground for admission to higher education.

The ambition of diversifying the paths to higher education has long been discussed in international contexts, primarily as means of achieving increased equality. The recommendations from UNESCO's Second Conference of Ministers of Education 1973 can

---

1) We use the notion of "adult students" to describe nontraditional or new groups of students having work experience of some kind when they enter or reenter higher education. It must be emphasized, however, that adult students in this sense are not necessarily "underprivileged".

be mentioned as an example of this. They included the following words,

> "Existing barriers (to higher education) have to be removed and, in principle, every type of secondary school training or corresponding experience acquired in working life should qualify for higher education. With these perspectives it is self-evident that the concept of higher education must be regarded as much wider than the traditional one." ...
>
> "The rules of qualification and selection for higher education must be chosen so as to give adult students real possibilities to gain admission to different higher education programmes, on the same basis as pupils coming directly from the secondary school. Working-life experience and other activities promoting the individual's abilities and broadening his frame of reference should therefore be taken into consideration in the rules for admission to higher studies." (UNESCO, 1974)

With a view to following up and bringing up-to-date the studies concerning access carried out in the sixties (Bowles, 1963; UNESCO, 1967) UNESCO is planning a new study of Access to higher education in Europe. The study has been preceded by a number of consultations under the auspices of UNESCO, the first in Bucharest in October 1977. In the summary of discussions from these deliberations, which were based on reports of facts from a number of member countries in Europe, it was pointed out that admission procedures have been changed in a growing number of countries in order to facilitate access to higher education for students who have not completed secondary education. Among the criteria introduced with the aim of offering new student groups a chance to compete with traditional applicants in the admission process special mention is given to 'the recognition of occupational experience' (UNESCO, 1978 a). At the second consultation on the same matter, in Paris in April 1978, agreement was reached on the following recommendation:

> "The recognition of work experience in admission policies is an increasingly important factor, which has influenced various aspects of higher education. It has presented both problems and benefits to higher education institutions and produced some anticipated results in some states. This area is worthy of further study." (UNESCO, 1978 b)

The present paper cannot deal with the issue of work experience as a substitute for formal academic entrance requirements in the whole of its extent. At the same time it is important not to reduce the problem to a technical issue only concerning the admission procedure itself and the recruitment of students. This introduction underlines the close link with certain basic questions concerning the goals and content of higher education. How questions of access to higher education and the recognition of work experience in particular are dealt with is related to the structure of the education system and labour market in a country, to its general political orientation and to attitudes to schooling on the whole. Apart from the impossibility of covering all the existing variants, this paper is limited by insufficient knowledge of the actual admission regulations in different countries.

Quite naturally then we have chosen to base our discussion primarily on Swedish conditions and experiences. As has already been mentioned Sweden is one of the few countries to have introduced the valuation of work experience for admission to higher education in general rules. Swedish experiences can therefore be assumed to be of interest in an international perspective. In addition we shall make some comparisons with conditions in other countries, but without claiming to be comprehensive. Although our discussion is founded entirely on conditions in the industrialized countries, we hope that this paper may also be of some interest to educational planning in developing countries.

The theme of the essay is work experience as a substitute for formal academic entrance requirements. This means that we deal with the question of how work experience functions in relation to higher education which builds on particular background knowledge, completed secondary education as a rule. Consequently we ought to ignore completely open access higher education which means that entrance requirements are abolished formally. As will become evident further on we consider that open access higher education is also based on the assumption of a relatively comprehensive prior education. However, we draw a distinction

between open access institutions which address themselves primarily to young people under 20 years of age (for instance, the open colleges in the US) and those aiming at older age groups. Only in the latter case do we consider that work experience is intended to act as a substitute for formal school qualifications. In addition we take the view that it is not possible to discuss work experience as a substitute, i.e. as an alternative route to higher education without, at the same time, dealing with work experience as a general (additional) qualification for admission to higher education.

The aim of this paper is to clarify the concept of work experience in relation to higher education and to discuss the conditions for and consequences of the introduction of work experience as a criterion for admission to higher education. We regard our contribution as a first attempt to elevate the discussion of this subject to a more general level.

The paper consists of four parts with a short summing-up at the end. First we define, in Part two, the content of the concept of work experience and sum up the motives adduced for recognizing work experience for admission to higher education. This part leads on to questions concerning the significance of work experience for enrolment patterns and for the form and content of higher education. A review of the existing ways of recognizing work experience leads to three different models. All exist in some form in Sweden today. We make use of this fact in Part four to shed light on the effects, on enrolment primarily, of work experience as an entrance criterion. Subsequently we analyze, principally on the theoretical level, the pedagogical consequences of such reforms. In the summing-up we want, above all, to point to issues of importance for future educational planning and research.

2. WORK EXPERIENCE AND POLICIES OF HIGHER EDUCATION

The purpose with this chapter is to give a general overview of the motives for introducing work experience as an admission ground and additional qualification in higher education. On the basis of this description we shall look more closely at the concept of work experience and its function in higher education. We use the reform of higher education in Sweden as a starting point for a more fundamental discussion.

2.1 Motives for taking work experience into consideration

One problem in an analysis of objectives of educational reforms is that they may very well change from the time the reform is suggested to the time it is implemented. An examination of the higher education debate in Sweden between the early 1960's and 1979 indicates a shift in policy. In broad terms the development in Sweden has gone from an emphasis on economic goals and productivity to a greater accentuation of equality and social justice. These changes are related to new conditions for higher education as a whole and a better supply of well-educated manpower. The shift or redifinition of objectives certainly raises difficulties in reform evaluation in general and in a study of the widened rules of admission in Sweden (the 25:5 scheme) in particular. What weight should be accorded the original aims as expressed in earlier documents and what role should goals in the current debate occupy?

Another side of the problem is that the view that work experience should be accorded importance in admission to higher education can be found for different reasons in countries with different or opposite demographic circumstances. As was mentioned in an OECD analysis:

> it is significant that the idea of recurrent education was launched in Norway and Sweden at a time (the late sixties) when, because of the extraordinary expansion of post-compulsory education, restrictive entry into certain university branches was considered inevitable. Limitation of intake capacity and selection among qualified

> school leavers could be made a more acceptable and legitimate proposal if candidates were assured that after a period of work, or having reached a certain age, they would have the right to enrol in postsecondary education. OECD (1977) p. 50.

In many other countries quite different demographic circumstances are behind the fact that, today, interest is increasingly being focused on the adult population. The low birth rate in the fifties and sixties will lead to a decline in the demand for higher education from the traditional groups who usually apply. In order to cover this loss (with the aim of retaining their present dimensions) the universities and colleges are trying to recruit new categories of students, mainly adults already in working life (see e.g. The Times: Higher Educational Supplement 15/4 1977, Higher Education into the 1990's in United Kingdom, a discussion document).

Thus, the demographic and economic conditions in the beginning of the sixties probably influenced the introduction of work experience as a critical factor of admission to higher education in different countries e.g. Sweden.

At the beginning of the sixties the significance of education for economic development was generally being given considerable attention. Denison's analysis of the development in the USA had shown that investment in education and research would be three times as profitable as investment in real capital (Denison, 1962). These research results seemed to fit well with the educational optimism at the beginning of sixties.

Another general thesis at this time was that the radical technological change taking place raised considerable demands for educational investments to meet the need for well educated manpower. In Sweden for example there was only a limited supply of manpower with a higher education at the beginning of the sixties. As a result of a very selective and hierarchically constructed education system (see figure 2:1) the proportion of graduates among the economically active in Sweden was only 2 per-

cent in 1960, a relatively low figure compared with other industrialised countries (Sohlman, 1976, p 117).

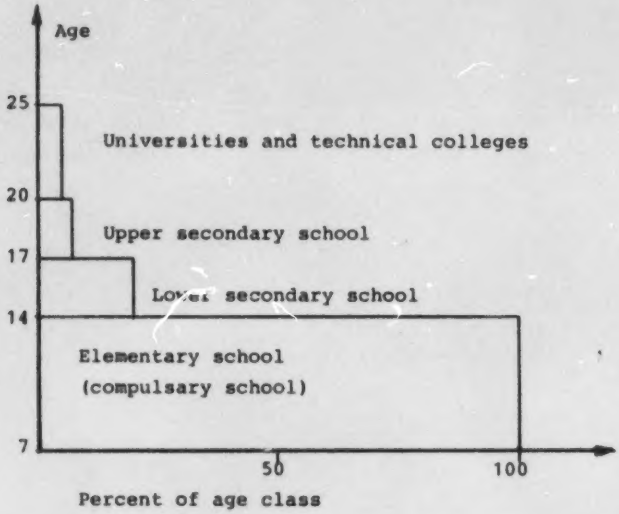


Figure 2:1. Outline of the old school system and the routes to higher education. (The space is roughly proportional to the number of pupils c. 1950.)

At that time Sweden had an occupational structure and a ratio production/worker more reminiscent of the USA's than of Portugal's while the supply of manpower with a higher education was closer to Portugal's than the USA's. Even if it is possible to demonstrate a certain complementarity between occupations usually requiring higher education and real capital the educational structure within the labour force probably gave rise to some concern in view of the two theses referred to:

1: education is a central production factor and

2: continued rapid structural change with considerable demands for the improvement of the qualifications of the labour force could be expected.

The idea of giving adults without upper secondary school education the opportunity of gaining a higher education was given more nourishment by the studies of the 'reserve of talent' carried out in Sweden in the fifties. The primary aim of these studies was to provide a foundation for changing and broadening the narrow intake to upper secondary school education (cf figure 2:1). However, the studies were also of decisive importance for the reforms carried out in the sixties with the aim of giving adults increasing opportunities of studying at the upper secondary and post-secondary levels. To sum up, the conditions which existed for a widened access system in e.g. Sweden can be illustrated by the figure below.

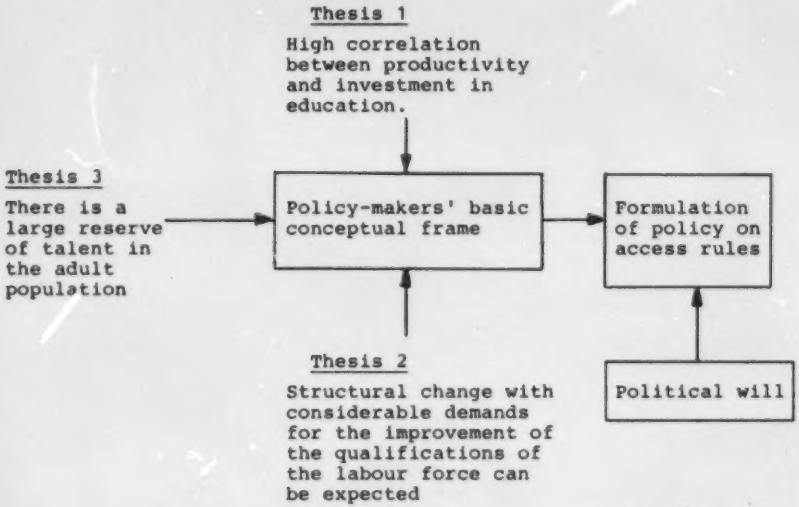

Thesis 1
High correlation between productivity and investment in education.
Thesis 3
There is a large reserve of talent in the adult population
Policy-makers' basic conceptual frame
Formulation of policy on access rules
Thesis 2
Structural change with considerable demands for the improvement of the qualifications of the labour force can be expected
Political will

Figure 2:2. Social and economic conditions for policy development on access.

The purpose of this model is to underline the fact that reforms are not just results of educational ideas, but also responses to certain conditions in society and working life. The intro-

duction of work experience in the admission system is not only a way of increasing recruitment, but also a method of up-grading the labour force. Of crucial interest is the concept of the reserve of talent. A number of citizens had enough skill and competence for studies in higher education, but they lacked the formal requirements for higher studies. By giving more value to their professional background and work experience, the up-grading equation seemed to come closer to a solution. From a policy point of view this seems rational, especially as this up-grading could be done at a lower cost for society, than would be necessary if the adults in the labour force had to be given the same education as young students.

Predictions of occupational aptitude

The fundamental issue is how admission and selection rules are related to academic studies and future employment. In figure 2:3 we present two different predictive models.

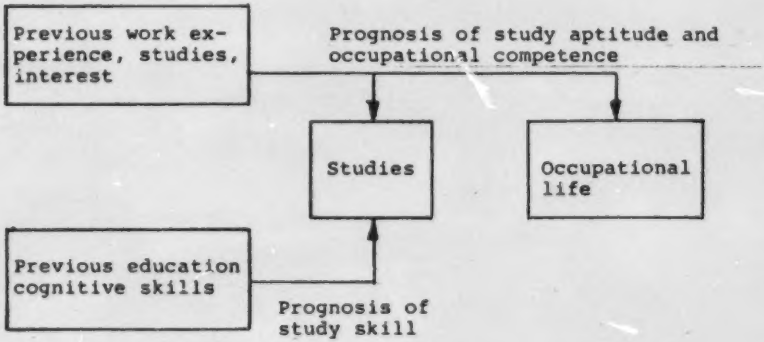


Figure 2:3. Prognosis of study skill and occupational aptitude.

Traditionally admission rules and selection are based on a prognosis of study aptitude, and not on occupational aptitude. The most likely explanation of this is the technical difficulties of making a selection of the latter kind. An example of

this is the extensive research carried out concerning qualifications in medical and teaching professions. Despite considerable efforts, it has not been possible to reach any results that could be used for a selection based on an assessment of professional aptitude (Gage, 1972, Ljung & Naeslund, 1973, Keochakian, 1978).

The critical question is whether society - on account of the way selection traditionally takes place - gets professional groups e.g. doctors, teachers whose composition is less suitable than if selection had been based more on an assessment of factors which could be of importance in the occupation (Bergendal, 1978, p. 26).

In Sweden one of the motives for according work experience importance in admission is that a premium is placed on being able to recruit people with varied kinds of experience to a study programme. In this way it would be possible to ensure that those active in various spheres of society had varied backgrounds of experience.

Apart from the purely technical obstacles to predict occupational aptitude, there are also other, more basic objections against using this criterion for selection. In Sweden as in several other countries the fundamental philosophy has been that higher education, with the exception of the professional study programmes, should be more broadly related to working life and not directly linked to a certain profession. Accordingly occupational aptitude could only be expressed in very general terms. As a consequence it would not be possible, nor desirable to base admission on occupational aptitude. Instead the aim would be to avoid obstacles of formal requirements as a barrier for those with an interest and with actual prospects of managing the course.

The issue assessment of educational and professional competence has lately attracted great attention in the USA. There have been two points of departure for this new forms on assessment. The

first originates in the increasingly conspicuous underemployment. The large supply of well-educated manpower has resulted in the educational requirements for many occupations increasing without any change taking place in the work. In many cases the situation has been aggravated even more by increased mechanization and automation which have led to an appreciable dequalification (Berg, 1970, O'Toole, 1977, Levin, 1978, Rubenson, 1979). As a result there have been demands that employers should not be allowed to require a higher level of education when filling a post than is in fact needed for job competence.

The second reason for the attention to competence assessment is the fact that the traditional selection instruments have turned out to have a poor ability to anticipate success in working life (McClelland, 1973). Furthermore Klemp (1977) found that existing requirements of knowledge for acquiring academic credentials are not necessarily required for competence in many occupations. Klemp's review of analyses of competent performance shows that not only cognitive factors, but also inter-personal and motivational factors are critical to effective performance in postacademic jobs.

The conspicuous underemployment as well as the demand for a better forecast of success in working life has led to increased efforts to try to measure not only cognitive and so called non-intellectual factors, but also to increasing interest in the concept of 'experiential learning'. In contrast to Sweden, endeavours to find other selection instruments than grades and intellectual aspects have not been motivated by the desire to strive for as large a spread as possible within occupational groups or to find methods which hinder the social influence from making itself felt. Experiments in the USA with other instruments e.g. interviews, biographical data, personality assessments etc aim instead at a more effective selection process, i e obtaining a higher correlation between the predictors - the selection criteria used - and study results. Further attempts in this direction are now questioned as incompatible with social aims. (cf. Keochakian, 1978).

Equality in recruitment

Admission rules are one of the instruments which can be used to attain a more equal recruitment to higher education. The admission rules have a double role: one goal is to counter as far as possible the occurrence of social differences and of inequalities between the sexes; on the other hand, a second goal is to neutralize previous shortcomings of this kind caused by a hierarchical and selective system (cf. figure 2.1). Thus one of the aims of the new Swedish admission rules is to compensate the adult population for an earlier, less extensive school system. In 1970, for instance, the only formal basic education possessed by a good 70 percent of the Swedish population was at most 7 or 8 years of elementary schooling. It is in this group that the so-called "reserve of talent" is to be found i.e. people with the requisite qualifications for higher education but without formal eligibility.

The admission rules are also seen as a means of countering unbalanced recruitment in the future. Research has demonstrated beyond any doubt that social background has a strong influence on grades and also makes itself felt in every choice in the education system (Bowles, 1963, Husén, 1969, Boudon, 1974). The strong correlation that exists between social background and school grades indicates that a selection system based entirely on grades will disfavour those from lower social groups. Thus by making admission to higher education more independent of formal schooling, previous educational choices will hopefully not continue to be as decisive for an individual's future opportunities as they have been up to now.

The purpose of according work experience weight in selection is to find routes which make it possible to neutralize the effect of social background i.e. work experience should be less loaded in this respect than grades. However, the critical question is which groups are going to make use of these opportunities and embark on study programmes with restricted admission.

In a longer time perspective, not least in the light of recurrent education, it is important to study what effects the recognition of work experience has for the educational choices of the younger students. What kind of students will go out into working life to get the extra points needed to get into a highly selective programme, what kind of students are going to begin other programmes and finally what kind of students are intended to go directly to working life and never returning to education? For the individual upper secondary school pupil the Swedish rules mean, in fact, that his/her planning period now includes not only the study programme but also the period he/she must work to earn the points needed to gain admission.

A plausible assumption is that the recurrent education model will disfavour students from lower social groups, quite contrary to the intention of the reform. We know, for instance, that individuals with a less privileged background are less prepared to embark on a long education (cf. Gesser, 1971). Consequently an important part of the Swedish follow-up of the reform of higher education should be to conduct a closer study of how the admission rules and ideas about recurrent education are perceived by upper secondary school pupils and what consequences they have for their choices.

Economic motives

The altered admission rules and the exploitation of the "reserve of talent" were to supply the labour market with the highly qualified manpower that the rapid structural change was thought to demand. The economic motives have increasingly given way to the aspect of equality in the public debate. This seems to apply not only to Sweden but also to other countries as for example the UK where discussions of recruitment to the polytechnics and the Open University today deal principally with this aspect.

On the basis of a strictly economic goal it is most important that both recruitment of students and courses of study are related to the sectors where development is most rapid. If this

is the principal motive attention is, of course, drawn to entirely different aspects than if the basic aim is equality.

In our view not enough attention has been paid to this in the evaluation of the attempts made to recruit adults to higher education. Also the fact that the various goals drawn up for a reform can come into conflict with one another often seems to be disregarded. An important point of departure for the assessment of the experience of widened access gained up to now is to decide how much weight redistributive policy (equality and democracy) carries in relation to the economic goal and the goal of satisfying individual wishes. Naturally there are considerable differences between various countries in this respect and it is important to take account of these in international comparisons.

Pedagogic points of departure

The recent trend towards a long, continuous period of education in youth is assumed to be a reason for the motivational problems which can be observed in different parts of the education system. The time when the student can put his knowledge and skills into practice is so far in the future that they are not experienced as meaningful by some students. Studies in recurrent periods constitute one way to cope with these problems. Hopefully in this way a closer link between theory and practice will be attained and the need for shorter-term goals for studies will be met. However the idea of solving educational problems by means of an increased component of work experience seems to build more on pious hopes than on a penetrating analysis of the cause of the present-day problems. Evaluations of attempts in the USA with Career Education, for instance, point to discouraging results (see among others Levin, 1978). We do not want to deny the importance of trying to find a closer link between theory and practice. We are however sceptical to the simplified discussion that is so often carried out.

Advocates of recurrent education consider that an increase in the proportion of students with work experience would make higher education more efficient. The stronger study motivation and clearer goal-orientation would give a more rapid flow of students through higher education. The individual who has been out in working life is thus expected to be more able to define the educational needs he or she experiences. Other factors arguing for work experience are that students with such a background can contribute more actively with views about educational content, design and methods.

Another argument in favour of a system which alternates education and employment is that the experience and values which are brought to the classroom by people with experience of working life could be an important means of reducing the gap between different groups in society.

However, it should be noted that recurrent education with its attendant requirements of work experience makes great demands on the adaptability of e.g. the organization, content and methods of higher education. The spread of interests, experience and goals within the student group can be expected to increase with consequent difficulties for the faculty. Up to now only very limited attempts have been made to analyze more closely problems concerning pedagogics and educational methods which can accompany increased requirements of work experience. In the present paper we have therefore devoted the final chapter to 'the effects of work experience on the educational process'.

2.2 The concept of work experience in higher education

The concept of work experience

The term work experience indicates experience acquired mainly in working life and not life experience in general. It is important to stress this distinction as different practices have developed in different countries. The opportunities created for adults in the USA (e.g. CLEP and the granting of academic credit

for experiential learning) are based on the sum of experience the adult has acquired outside the educational framework regardless of how. Of interest is not only the life experience as such but the skills and knowledge the individual has stored during his life. In the Swedish admission system, on the other hand, work experience is primarily to constitute a substitute for upper secondary school education. However, the practice developed means that the decisive factor is really age and not work experience. It might be reasonable to talk about life experience also in the Swedish system.

In spite of the different conceptualizations in different countries, we propose the following model:

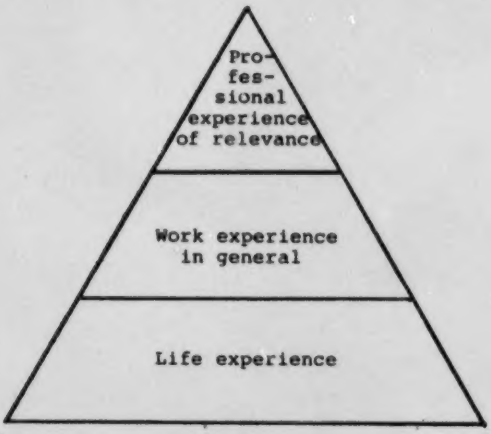


Figure 2:4. A model of work and life experience.
(From Edholm, 1978.)

Both from an assessment and an educational point of view it is critical whether we look for relevant experience or experience in general. On theoretical grounds it might be possible to make a strict distinction between life and work experience. In practice, however, there is a relative zone of transition.

What are the jobs and experiences which could constitute a substitute with upper secondary schooling? We shall consider two aspects of work experience: content and extent.

A fundamental question is the content of the work experience. It must be specified in the light both of the objectives of the measure - substitute, additional credit in selection or formal entrance requirement - and of the choice of studies.

An initial distinction is between gainful employment and other activities as housework. The Swedish rules place work in one's own home (either care of children under ten years of age or of other people, on account of sickness, age or handicap) on an equal footing with employment. One reason for not given housework special treatment is that an obligatory requirement of work experience outwith the home would hit women particularly hard. Consequently there are powerful reasons for constructing the rules in such a way that housework can make up at least part of the work experience giving eligibility. It goes almost without saying that some acquire this knowledge and experience in their employment while others do not. The problem is defining more exactly which occupations can be assumed to give adequate qualifications for academic studies. For practical reasons there appears to be only two possibilities. Either eligibility is limited to some carefully defined occupations or all occupations are recognized. Any other kind of rule unavoidably leads to difficult demarcation problems.

For reasons of fairness the rules on the content of work experience must take account of the wide variety of possibilities the individual has of acquiring certain specified occupational experience. If these aspects are emphasized the result is - as

in Sweden, for instance - that little or no attention is paid to qualitative aspects i.e. the content of work experience. What is demanded is instead general work experience.

It is not unusual that an entry condition for a course of study is a period of employment in some special area related to an envisaged future occupation, so-called obligatory prepractice. The purpose of this kind of practice is that the student would get experience of the kind of work the course of study is intended to lead to. Here we could talk about requirements of relevant work experience. The whole system with "sandwich courses" is based on relevant work experience.

In recent years obligatory pre-practice has partly been abolished in Sweden. The educational motive is that this kind of experience could equally well be gained after admission and be included as an integral part of the studies.

At the same time as requirements of relevant work experience have been reduced voices have been raised for obligatory work experience of a general character - and from entirely different points of departure. A certain period of employment is said to give a better foundation for studies and occupational choice. Another reason is that many go direct into working life, often to begin a career leading to a supervisory position, without any other experience than 15 to 18 years at a school desk.

Employees in client-related occupations as teachers and social workers must be able to understand people who live in different environments and under other social conditions than they do themselves. This brings up requirements of obligatory work experience which, unlike the traditional practice, ought not to be directly related to the future occupation. Instead, it should involve contacts with human beings living under other social conditions and with other working conditions. For teachers, the task of preparing pupils for their future occupations also raises the question of a good knowledge of society and working life. For reasons of this kind the introduction of 15

months obligatory work experience outwith the teaching profession as an entry condition to teacher training is being considered in Sweden.

One of the criticisms of requirements of obligatory work experience is that prospective university and college students get temporary jobs at the expense of the young people with a short education who already find it difficult to get a foothold on the labour market. Consequently, the policy formulation related to recurrent education will be much more difficult and delicate. Will young students with sufficient study skill and study interest compete for short-time job experience with students with inadequate educational experiences?

Another aspect closely related to content is the extent of the work experience. In Sweden, the only country where work experience generally constitutes a substitute for upper secondary school education as a general entrance requirement, the rule is 25 years of age and 4 years work experience. The main reason for stating not only the necessary period in working life but also a minimum age is the wish to avoid creating shortcuts to higher education which could be exploited by young people without upper secondary school education. The view is further that, if the period of work is less than 4 years, there is a risk that people will fill out their time with poorly qualified part-time service jobs while waiting for the work experience requirement (age) to be fulfilled.

For work experience as a formal requirement and qualification in selection both a certain minimum period and a certain maximum period which may be credited must be fixed. If the aim of the work experience is to give the student solid experience of working life a relatively long continuous period of work is required. School pupils working during their vacations seldom come into contact with trade union activities and only have time to build superficial contacts with the work environment and their colleagues.

In a study of how active teachers assessed the value of their work experience for school work a correlation emerged between the length of the period of employment and its value (Edholm, 1978). As can be seen from figure 2:4 the level of satisfaction concerning value varies between different occupations.

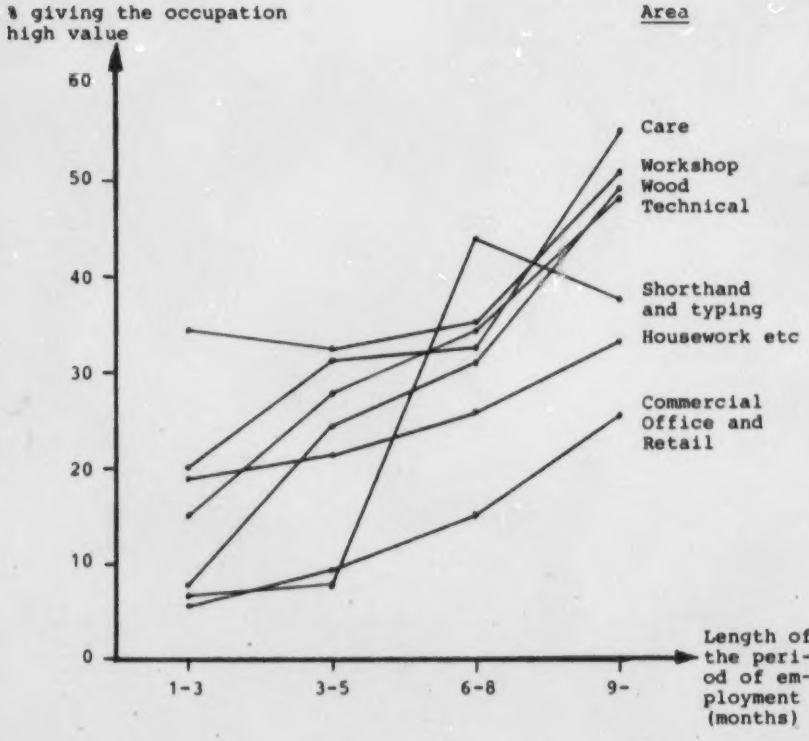


Figure 2:5. Correlation between the length of the period of work experience before studies and the value for professional work.

Another factor which must be taken into consideration is what negative effects a long minimum time gives rise to. There is a risk that severe requirements can lead to socially unbalanced recruitment as people from less study motivated environments are not as inclined to return to formal education after a long period of employment as people from more motivated ones. On the basis of general considerations of the type dealt with here Sweden has chosen to stop at 15 months as the minimum period and 5 years as the upper limit.

How we choose to design the qualitative and also the quantitative requirements of work experience will determine the breadth of the base for recruitment. Thus every qualitative requirement means a narrowing of the group which can be recruited.

2.3 The function of work experience in higher education

No uniform view of the function of work experience in higher education has developed; rather, several different models have appeared.

We distinguish between three different functions of work experience as a ground for admission:

1. work experience as a substitute for upper secondary school education (alternative route) for adults
2. additional credit in selection for all students
3. formal requirement for admission to some study programmes.

Traditional eligibility for higher education, completed upper secondary school education, has meant that students have had a common frame of reference consisting of school knowledge in different subject e.g. languages, literature, social issues etc. To a great extent this orientation of knowledge has come to determine the general view of education and educational content. Widened eligibility means a departure from this view. General education is no longer converted with school education but is regarded as also being a function of experience from

working life. Age and experience as grounds for eligibility bring up the question of how the requirement of general knowledge is to be met.

One way of guaranteeing that adults have this general knowledge without obliging them to acquire a traditional upper secondary school education is to provide an alternative route into higher education for adult students like the Open College Federation [1] in the UK. The students attend classes for about three hours per week for two years. The course is designed to acquaint them with a number of subjects (languages, arts and social sciences, and physical sciences, European studies). The scheme offers a structural alternative to the normal entry route of 'A' levels, specially designed for adults (Jones, 1977).

The Swedish policy has been that adults should not need to demonstrate their general knowledge in terms of school courses. Instead, the view has been that age and experience - regardless of kind and the way it has been gained - give a general knowledge which ought to be regarded as equivalent to and interchangeable with the one schools give upper secondary pupils.

The requirement of study aptitude consists of:

1. intellectual qualifications as manifested in previous studies or otherwise,
2. study training, meaning, among other things, the ability to solve problems and general communication skills, acquired through studies or other activities,
3. theoretical background knowledge of specific subjects, related to the special entrance requirements for the study programme in question.

The requirement of study aptitude means that all admitted students should have the prospect of completing their programmes

---

1) The federation involves some colleges and universities in the north-west of England and is a recent development.

within a reasonable time. Probably no country is prepared to purchase broader recruitment at the price of lower quality or too long period of study. In Sweden it has been firmly emphased that widened access may not lead to reduced requirements of quality in higher education. The quality requirement could thus be defined as the prospect of completing the course of study within a reasonable period of time.

The point of equilibrium between the breadth of the base for recruitment and the study qualifications of those recruited is determined by the design of the admission rules. Research on drop-outs in higher education shows unequivocally a correlation between participants' study qualifications and drop-outs (Tinto, 1975, Pantages & Creedon, 1978). If we want to reduce the proportion of drop-outs caused by deficient study aptitude by means of the admission rules these rules will have to be relatively strict. If we are prepared to risk a somewhat higher drop-out rate the conditions can be made milder.

In the light of this it may seem surprising that age and work experience are considered to give the general qualifications for higher education - i.e. the broad frame of reference and study preparation considered necessary for academic studies. As the rules are designed they mean that no special value is attached to the nature of the work experience i.e. its quality and relevance for the course of study in question, The attention is only confined to the quantitative aspect length. There is certainly no general notion that work and life experience, regardless of content, give the study preparation needed behind this point of view. When the rules were being designed the focus was not on the entire adult population; but on those adults seen as having real - but lacking formal - competence for participation in higher education.

Figure 2:6. A model of potential learners in higher education (The size of the fields does not correspond to any actual distribution.)

The purpose of widened admission is that the target group (field A) will not be discouraged from entering higher education because they would, for formal reasons, need to devote a great deal of time to preparatory education. It is considered to be unsatisfactory and unfair if shortage of time to fulfil the formal requirements for general eligibility hinders those with real qualifications from continuing their education. In the general debate on widened admission for adults without formal eligibility there is a tendency to forget that the actual target groups are those who have acquired real competence in other ways (Furniss, 1971, Teichler, 1978, p. 78).

One of the main reasons for the policy confusion in Sweden is that the goals of higher education and of adult education in general are not kept apart. During the seventies the latter has been given a strong redistributive emphasis. The overall goal of the reforms has thus been to level out differences in resourses i.e. in economic, political, cultural and social respects. In order to fulfil those goals it is necessary to recruit more students with insufficient educational background, than students with a long educational career. The redistributive objectives of adult education are apparent - in addition to inofficial documents and pronouncements - closely related to the distribution of economic resources. In order to effect redistributive goals, we need different measures of positive discrimination, e.g. special adult study assistance, outreach activities, financial support etc.

In practice the study associations and to some extent the municipal adult education are more successful in recruiting people with a short education living in disadvantaged environments. The latter school form belongs to the regular school system and constitutes a parallel system to the comprehensive and upper secondary schools with the aim of giving adults a corresponding education. The study associations originated in the popular movement which developed at the end of the last century. The majority of the courses organized are shorter study circles which do not give any form of formal eligibility.

If we look at the objectives of and resource allocation in higher education it is clear that higher education, in contrast, does not have an equally clearly expressed redistributive objective. Instead, an inspection of official documents concerning widened access shows quite plainly that the intended target group is assumed to have acquired considerable resources through participation in organizations, working life or in other ways.

It is important to emphasize that Swedish policy on the recruitment of adults to higher education is implemented through two strategies and is not limited to widened access. Even if work and age generally give general eligibility it is known that many lack real qualifications for satisfactory participation in higher education. For these, municipal adult education and the study associations can supply the preparation probably needed. One of the central tasks of municipal adult education is to give potential university and college students the special eligibility required for a considerable proportion of the study programmes. The situation could thus be described by the following figure:

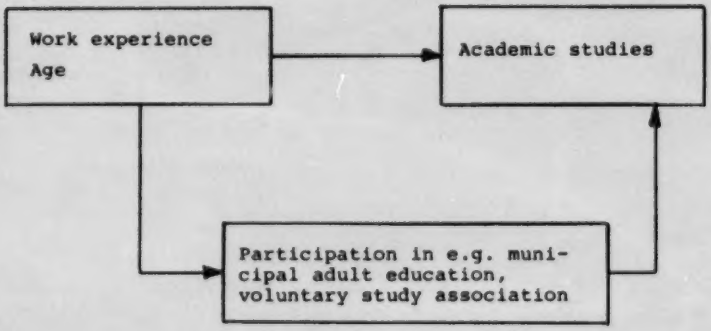


Figure 2:7. Direct and indirect routes to higher education for adults.

An evaluation of the Swedish experiment to open up higher education to new groups ought to take both the routes described in the figure above into consideration; unfortunately this has seldom been the case. Whether an individual chooses to go direct to higher education or to take a longer route via some other form of education is - on the assumption that no special background knowledge is required - to a large extent determined by how the individuals perceive their study abilities and how their formal and informal qualifications are valued in the admission system. An interesting policy problem is the social consequences of this self-selection process. Current statistics from Sweden show that an increasing number of students with working class background chose to work instead of going to higher education. The unanswered question is, if they will ever return to education in the future or if they will stay in working life. Thus, the individual self-selection seem to play a critical function in a system of recurrent education.

2.4 Assessment of work experience - some comparative aspects

We have already classified work experience as a ground for academic studies both according to its content (relevant professional experience, work experience in general and life experience) and according to its formal function in relation to higher education (alternative route, additional credit or formal requirement). We make use of these distinctions here in trying to present a very rough outline of how work experience is recognized for admission to higher education in different countries.

Work experience as an alternative route to higher education underlies the special admission rules for adults which have emerged during the last decade in the majority of the industrialized countries. On account of differences in the traditions and design of education systems, the extent and design of the rules has varied from country to country. It is not possible to present a comprehensive picture of this as the variations

are endless. In many countries, above all in the Anglo-Saxon countries which have a more decentralized and diversified system of higher education, the evaluation of work experience generally takes the form of an individual assessment based on tests, interviews and other non-intellectual factors.

In the general admission schemes for adults introduced in a number of other European countries the requirement of work experience generally takes the form of a certain minimum age, sometimes combined with a certain minimum period of work experience. The most usual age limit is 25. The substitution for formal academic requirements made in these cases usually only refers to the general entrance requirements, i.e. the general preparation for studies in the form of a general frame of reference, maturity and certain skills in methods of studying. On the other hand work experience is not assumed to be a substitute for factual knowledge and special skills. Consequently the 'age plus work'-rule is often combined with the requirement of specific subject knowledge (as e.g. in Sweden) or achievement tests (as in The Netherlands and Spain). It is also important to point out that these special admission rules for adults often have a limited area of application. In many countries they only apply to certain 'less noble' forms of higher education like part-time or external studies.

As the primary goal of these reforms has been to bridge the growing educational gaps between the generations they can be regarded as temporary measures during a transitional period. In a situation where the greater part of an age group completes upper secondary school the need for special admission rules for adults disappears in the long run. This is true as long as account is not taken of the possibility that, in the future, some students may interrupt their education at the upper secondary school level to return direct to higher education as adults. In Sweden discussion of whether this is a development worth aiming at has begun in connection with the planning of the upper secondary school of the future.

Experience available so far suggests that such special admission rules for adults have not been of any great importance, purely in terms of numbers. In the majority of countries non-traditional students only constitute a small proportion of the total number of students (see e.g. Cerych, 1975). The importance of work experience only increases when it is regarded as a general criterion for all students for admission to higher education, i.e. even for students with a traditional school background. With that we have come to the other forms for recognition of work experience, viz. work experience as an additional credit or a formal requirement for all students.

Cerych (1978) has carried out a survey of the existing rules of this kind in a number of European countries on the basis of national reports. He analyzes the different ways of assessing work experience according to four aspects:

- the type of tertiary education (full or part-time) for which work-experience is taken into consideration;
- whether such experience is compulsory, and if so, for what subjects;
- whether such experience must have been in a related field;
- the length of experience taken into consideration.

The countries in Cerych's material which state that they recognize work experience are, first, a number of East European countries (Bulgaria, The German Democratic Republic, Poland, Romania, Ukraine and Yugoslavia) and, second, two Scandinavian countries (Sweden and Denmark). Using the four aspects mentioned above as the matrix Cerych gets the result shown below. (Figure 2:8) The scheme is not comprehensive and it is emphasized that other countries are also known to be in favour of the evaluation of such work experience e.g. various institutions in the US.

Recognition of Work-Experience as a Criterion in the Admissions Process								
COUNTRY	TYPE OF TERTIARY EDUCATION		HEIGHT ATTACHED TO WORK-CRITERION		DEGREE OF RELEVANCE REQUIRED		MINIMUM PERIOD	REMARKS
	full-time	part-time	compuls.	non-compuls.	related	non-related		
BULGARIA				X			2 yrs.	exemption from minimum mark at entrance exams; competition within this group of applicants only
	X			X		X		for most subjects, "general" (as opposed to course-specific) work-experience is taken into consideration; a certain coefficient dependent on length of work-experience is applied to certain proportion of applicants
FINLAND	X		X		X			engineering
	X			X	X	X		teacher-training; both related and non-related work is given credit
GERMAN DEMOCRATIC REPUBLIC	X		X				1 yr., s.t.hom	pre-study practical for courses in technical subjects, agriculture, economics, medicine; career-training involving; work-experience required for technical subjects at technical universities
POLAND	X			X			2 yrs.	credit points for work-experience as part of admissions criteria
RUMANIA		X			X			in the case of evening tertiary education
		X				X		for other form of part-time tertiary education
SWEDEN	X			X		X	15 mths.	all candidates can improve their admission chances in all (incl.restricted) courses by work-experience; all work (incl. child-care and military service) is counted; maximum of 5 yrs. taken into consid.
		X (single courses)		X		X	15 mths.	local authorities can take work-experience into account when deciding to admit an individual basis outside the named procedure
USSR	X		X		X		2 yrs.	for admission to journalism, law, literature, philosophy, economics, political economy
	X		X		X		1 yr.	medicine
YUGOSLAVIA	X			X			various	maximum 10 points (10%) awarded for work-experience as part of overall admissions criteria
		X						no details given

Figure 2:8. Recognition of Work Experience as a Criterion in the Admissions process (from Cerych, 1978).

Even if this picture is not comprehensive it can help us to sketch out some different models for the recognition of work experience. The description also demonstrates that there is a relation between the classification principles we used earlier to describe the content of work experience and its formal function in relation to higher education. Thus the requirement of compulsory work experience most often concerns work experience related to the education applied to. When work experience is used as a general additional qualification a broad

sense of the concept is generally meant, for both ideological and practical reasons. When work experience constitutes an alternative route to higher education general life experience if anything is usually meant. This leads to the following three models with different ideological bases and with, in addition, different effects on enrolment and on the educational process.

Model I (evaluation of life experience for adults)

This model, which could also have been called 'new access routes', is not in fact based on any systematic evaluation of work experience as a substitute for formal academic entrance requirements. Ideologically these new routes originate more in strivings to redress generation differences and to extend the role of higher education to include the task of providing adults in working life with further education at an advanced level. Adults without formal school qualifications are assumed to possess real competence for some part of higher education, sometimes only after completing preparatory courses or tests.

The variations in practice are considerable and range from the pure open door policy, where no real assessment of the student's background knowledge is made (e.g. the UK Open University, the French University of Vincennes and several open access institutions in the US), to admission procedures in which the student's knowledge and motivation are evaluated after a detailed individual assessment (various institutions of higher learning, principally in the Anglo-Saxon countries). In the latter case work experience generally only constitutes a part of a comprehensive range of qualifications taken into account. The special admission rules for adults mentioned previously, such as the Swedish 25/4-scheme, can also be said to be variants of this model.

Naturally the breadth of the students' background of experience is considerable under these circumstances. As no clear notion of the degree of interchangeability of previous work experience

and formal schooling exists work experience often just turns out to be a supplementary feature on the sidelines of an unchanged traditional higher education. The result is increased structural differentiation in the higher education system (cf. Kerr, 1977). Even in Sweden, where conscious efforts have been made to avoid such a development, there seems to be a development towards "a hidden binary system".

Model II (evaluation of work experience in general)

When work experience of a more general kind, without direct relevance to the studies applied to, is recognized for all applicants a more systematic evaluation of experience from working life takes place. At present this principle is only applied in a couple of Scandinavian countries (Sweden and Denmark) and in a number of East European countries (Bulgaria, Poland and Yugoslavia). Here experience of working life, defined in a certain way, is assumed to give certain general qualifications comparable with school qualifications and, primarily, work experience modifies the importance of school marks in the selection of students. In this 'mixed model' the academic entrance requirements are still there, e.g. in the form of the requirement of a minimum level of knowledge in certain relevant subject areas, but their importance has been reduced by a kind of substitution with work experience. These kinds of admission rules originate in strivings for increased equality of access to higher education and for students with a broader base of experience. The greater variation in the students' backgrounds within the framework of one and the same system leads to tensions. In a system in which work experience is given a clearly defined value for admission and selection there is, quite naturally, also an expectation that this experience will be made use of in some way in the course of the education.

Model III (evaluation of relevant professional experience)

Work experience has yet another function in some of the East European countries, where occupational experience of relevance

to the programme of study envisaged is a formal requirement. According to figure 2:8 this is the case in the German Democratic Republic, Romania and Ukraine. There are sure to be isolated programmes applying this model in most countries. Later on we shall give an example of this, also taken from Sweden. In the first place the model can be said to be founded on the aim of bringing education and working life closer to one another and in the aim of making use of practical experience in education. In some cases - the Swedish example, for instance - the model may also concern fields new to higher education. Ideologically there is a clear link to a greater emphasis on the vocational orientation of higher education. In this model there are obviously much greater opportunities to define more clearly in what ways work experience replaces the skills and knowledge of the school and also to make use of work experience in the teaching.

Even if we have taken examples from different countries to illustrate the models it is important to emphasize that the models cannot be regarded as relating to different countries in their entirity. On the contrary it is often the case that all three variants are found in one and the same country. How this turns out in practice depends on the degree of centralization and diversification of the system of higher education in the country in question. This is illustrated in the matrix below where we have also filled in the three examples from Sweden we are going to describe in more detail in subsequent sections.

In a decentralized and diversified system of higher education the three models are often brought together in one and the same institution and no general descriptions can be given; this is the nature of the system. This "diffuse" form for substitution of work experience for formal school qualifications is certainly just as important as the more general rules introduced in certain countries on the Continent of Europe and in Scandinavia. These latter are, however, easier to describe and to analyze the effects of - which is probably an important part of the reason that they are depicted more often in international contexts.

Structure of higher education \ Evaluation of work experience	MODEL I (New routes)	MODEL II (Work experience in general)	MODEL III (Relevant professional experience)
Centralized, uniform	Sweden: 25/5-scheme	Sweden: New rules of 1977	Sweden: YTH
Decentralized, diversified			

Figure 2:9. Models for evaluation of work experience and structure of higher education.

3. WORK EXPERIENCE IN ADMISSION SCHEMES

3.1 The Swedish admission scheme

We present the Swedish rules of admission in this section, as an example of over-all policy concerning the recognition of work experience and containing all three models described above. In order to understand the function of work experience a reasonably detailed description of the whole scheme must be given. This also supplies an insight into all the judgements and practical problems confronting the introduction of work experience as a general admission criterion.

The new rules of admission in Sweden are the result of a long process of inquiry in which the orginal proposals were gradually modified. The decision in principle to widen admission to higher education was passed by Parliament in 1972 and the new rules were adopted at the same time as the higher education reform of 1977. The decision was preceded by a pilot programme of widened admission for adults to the unrestricted faculties. The aims of these reforms have been dealt with in the previous section. We only recall here that a general feature of the development has been a closer line between education and employment.

The Swedish admission system makes a fundamental distincition between general qualifications (eligibility) and special requirements.

The new admissions scheme defines four main ways of obtaining general eligibility for higher education. They are:

(1) to have completed a three-year stream of the upper secondary school

(2) to have completed a two-year stream of the upper secondary school

(3) to have equivalent education from a "folk high school" 1)

(4) to have more than 4 years of work experience and to be over 25 (the 25:4 qualification)

In these admission rules work experience is given wide interpretation; any kind of work experience including child care and

1) Folk high schools are a special Scandinavian phenomenon, originally institutions of adult education outwith the formal school system with links to different political or ideological organisations.

military service can be included in the 4 years required for the 25:4-qualification. However, the special requirements often mean that the equivalent of upper secondary school knowledge in certain subjects is required in addition to the general requirements (which also includes knowledge of Swedish and English).

This widening of access, which opens up higher education even to students from the two-year streams of the upper secondary school and to adults without formal schooling, applies from 1977 to the major part of all higher education in Sweden. The reform has been proceded by an experimental period which began in 1969 and during which widened access for adults applied to certain programmes at the universities and to the Schools for Social Work. (During this experimental period 5 years of work experience were required, with the result that the rule was previously designated as the 25/5-rule.)

During the experimental period the area of application of widened access for adults was expanded gradually; to begin with the rule only applied to adults in working life who wanted to take certain courses within a narrowly limited field (principally courses of a vocational nature in the social sciences and business administration). During the period 1969-1977 additional courses were included in the pilot programme. By the end of the pilot period 25/5-students could enrol in most subject areas at the faculties of Arts and Sciences. In 1972 the right to study was extended up to a full degree. Thus, in practice, the Swedish admission reform has applied to the Faculties of Liberal Arts and Sciences during a relatively long period of time. Later we shall present some results from this period.

When the 25/4-rule was extended to cover numerus clausus faculties the question of selection of students became topical. Previously selection had been entirely based on school results. A more heterogeneous group of applicants with different backgrounds and with qualifications which were not directly comparable

---

1) The Swedish higher education system has up to now comprised both restricted and unrestricted programmes. According to a recent Government Proposal the "free" sector is to be discontinued from 1979.

necessitated the design of rules for distributing the available study places to the different student groups in some way. [1] By these means one of the goals of the reform could also be realized, viz. that admitted students should represent widely varying backgrounds and experience. To achieve this the applicants are placed in so-called quota-groups. Each group is allotted places in proportion to the number of applicants in the group (a proportional quota system).

In selection to full degree programs the quota groups correspond to the four grounds for general eligibility mentioned previously. They are:

(1) applicants with three years upper secondary schooling or other, equivalent education,

(2) applicants with two years upper secondary schooling or other, equivalent education,

(3) applicants from "folk high schools",

(4) other applicants, i.e. people with 25/4-qualifications or school marks not comparable with those in group 1-3.

Foreign students are admitted outwith the quota system and may take, at most, 10% of study places.

Applicants in all categories can add credit points for work experience to their school marks. The broad definition of work experience which is used for general eligibility is also used for selection to restricted programmes. Applicants must have at least 15 months of work experience (in addition to the four years included in the general entrance requirements for 25/4-students). At least nine months must be in one and the same period of employment and shorter periods of employment (less than 3 months) are not counted. A maximum of five years work experience give credit points. Through these contraints negative consequenses of excessively short or long periods of work before studies are avoided. The broad definition simplifies documentation; assessment is based on certificates from employers (or the

---

1) One solution would have been to give common entrance tests or to transform all applicants' qualifications to the same scale. However, this has been rejected categorically in Sweden as it is feared to disfavour the underprivileged groups.

equivalent) without the requirement of a qualitative assessment.

However, an important principle of the Swedish system is that work experience should not be a necessary condition for admission to higher education. It shall always be possible for some students to go direct from upper secondary school to higher education. Without special guarantees this would not be possible for highly selective programmes if work experience were recognized generally; all the places would go to students with work experience. To prevent this a certain percentage of places is allotted to applicants selected solely on the basis of their school marks. A similar "guarantee-rule" gives some priority to adults who, having no other qualifications, are eligible solely under the 25/4-scheme. This is important since the rules allow 'double eligibility' and many applicants possess both the required school education and the 25/4-qualification.

In all four quota groups the applicants are ranked according to their credits. According to school marks and work experience in groups 1-3 and according to work experience and aptitude test in group 4. The aptitude test is voluntary and has up to now had a rather limited effect on the selection process compared with work experience. Finally the applicants are selected on the basis of their total of credit points. Both work experience and the study aptitude test are worth up to 2 points. School marks give up to 5 points. A further point can be given for organizational activities, but these in combination with work experience can only give a maximum of 2,5 points.

Every individual can apply to up to 12 different study programmes. Only a computerized procedure permits so many possible choices combined with such complicated selection rules. In order to give as fair a result as possible a successive reallocation to quota groups takes place during the course of the process so that, in principle, every applicant is only competing with other remaining applicants.

These new rules have been in force in Sweden since 1977. They have altered radically recruitment to highly selective programmes. Work experience has turned out to carry a lot of weight in the selection process. Both intended and unintended

effects have arisen. A more detailed account of this is given below.

Up to now we have been describing the rules for selection to full degree programmes. Selection to separare courses is made in a different way. The students' motives and ranking of the course in question are taken into account and applicants with evident needs are given priority; a predefined number of students are admitted on these grounds. The remaining applicants are put into quota groups which correspond to the expected target groups for these courses, The quota groups are:

(1) applicants with at least two years' previous higher education,

(2) applicants with at least 15 months' working experience but without the qualifications of group 1,

(3) other applicants, i.e. those without either previous higher education or working experience of import.

Even here the number of places allocated to a quota group is in proportion to the group's share of the number of applicants. The ranking order in each group is determined by the priority the applicant has given to the course. Where necessary ranking is decided by lottery. Thus school achievements have no influence on admission to single courses,

These rules are founded on the assumption that applicants to single courses are students with limited study goals and only a few alternative choices. In reality, however, it has been revealed that a great many students, both adults and young people, choose to take full degrees via single courses. In the Faculties of Liberal Arts and Sciences the majority of students are studying single courses,

In the following sections we are going to relate findings of other modes of valuing work experience for admission to higher education in Sweden. Part of the higher education system is not covered by the general admission rules described above and some programs require relevant professional experience for admission. An example of this is the experiment going on with so-called programmes of advanced vocational technology (YTH). They constitute a completely new form of higher education in Sweden focusing on occupationally trained workers in certain branches of industry. These programmes address themselves to

people with a relatively low level of formal education but with, in turn, extensive occupational experience. The entrance requirements are a complete two-year upper secondary course or a corresponding occupational training combined with at least four years' work experience in the occupation corresponding to the training. In selection attention is paid to the applicants' occupational training and occupational experience. Theoretical education does not carry any weight. An interesting aspect of the YTH-experiment is the different rules of admission and the way work experience is assessed and used in the training. We will expand on this theme later on.

3.2 Comparison of Sweden with Denmark

On account of differences in the education system between countris it is probably "more useful to compare likes rather than unlikes" when it comes to admission schemes. Therefore comparative studies of schemes in Sweden and Denmark or Australia and the United Kingdom might yield useful information, says Squires in a recent overview of admission policies for new groups in post-secondary education (Squires, 1978). We have taken note of this and made a rough comparison of the new rules for admission to higher education which were introduced simultaneously in 1977 in Sweden and Denmark (Kim, 1978 b).

Both countries represent a centrally planned and uniform system of higher education. Even if there are cultural, social and policical similarities between the Scandinavian countries there remain nevertheless significant differences between Sweden and Denmark in respect of education systems, traditions and outlooks, not least in higher education. To simplify we could perhaps put it this way: in Denmark a higher valuation of traditional academic qualifications has been retained, more importance is attached to school grades and more is staked on long, traditional academic courses of study than is the case in Sweden. Of course, this is of considerable importance for the way admission to higher education is applied in practice. In the following descriptive survey we emphasize the differences between the two countries.

The Swedish and Danish rules have many features in common but they also differ on important points. In both cases the rules apply, in principle, so <u>all</u> post-secondary education in the respective country. In both Sweden and Denmark work experience is an additional qualification for students with a traditional school background. Both countries operate a kind of quota system for different catagories of applicants. Sweden has chosen to combine the new rules with a central, computerized admission system, which makes it possible to apply more complicated rules for the assessment of qualifications and the allocation of quotas than is possible in the more decentralized Danish system. The Danish procedure also includes a 'central clearing' of all applications to higher education, but assessment and admission are carried out by each university or institution of higher education individually. Further, an important difference between the Swedish

and the Danish system is that in Sweden a distinction is made between students envisaging a full degree programme and students only intending to follow a single course while in Denmark no such distinction is made.

It is evident from the description of the Swedish admission rules that the construction of such rules involves a number of judgemental elements, not least concerning the recognition of work experience. What kind of work experience should be recognized? What should the upper and lower limits for the time accepted be? How should part-time employment be recognized? Should there be different rules for different kinds of education? How should work experience be documented? The solutions chosen are of considerable importance for the effects the rules exercise in practice. A comparison of Sweden and Denmark is interesting in this perspective because with its help we can draw some conclusions concerning the importance of such factors as e.g. the content of work experience and the length of the work experience recognized.

Also in Denmark the requirement of two or three year upper secondary education is the main principle for general eligibility. Upper secondary school grades are the principal selection criteria but work experience is also recognized. It is, however, possible to admit some applicants after individual assessment. In the Danish system the study places - not the applicants - are distributed among three groups:

(1) for applicants with an upper secondary school education
(2) for applicants with an upper secondary school education and with work experience not admitted in group 1.
(3) for applicants who
    a) have been granted exemption
    b) have another education conferring eligibility
    c) have a foreign education
    d) are 25 years old and meet the requirements, but have not been admitted in groups (1) or (2).

The size of the groups does not depend on the number of applicants, as in Sweden, but is fixed in advance. The proportions are different for different kinds of education and are said to be fixed in the light of the expected number of applicants in the different groups. Students admitted solely on the basis of upper secondary school education constitute e.g. 50 % in

medicine and dentistry, 70 % in engineering and natural sciences and 60 % in the humanities and social sciences. Applicants with work experience are given 40 % of the places in medicine and dentistry but only 20 % on other university courses. Group (3) has a quota of 10 % except in the social sciences where this group has 20 % of the places. Places are filled in the order (1) - (2) - (3). Applicants with work experience are given two chances and those over 25 have, in addition, another chance in group 3.

Except for admission to certain programmes, all kinds of work experience are also recognized in Denmark. But only paid work, military service and periods of self-employment give credit (a tax certificate must be produced). In addition it must be at least 3/4 of a full-time job. Points are calculated by multiplying school grades by a factor dependent on the length of work experience.

What are the most important differences between Sweden and Denmark? We sum them up in the following points:

- There is no equivalent to the Swedish 25/4-rule in Denmark. Adult student must apply for indivdial exemption.
- Credit is given for less work experience in Denmark (max 18 months) than in Sweden (max 5 years). However, within the time interval of 18 months work experience generally carries more weight in Denmark than in Sweden.
- In the Danish admission scheme the value of work experience increases as the student's average grade increases.
- The Danish interpretation of the concept of work experience means maintaining the view that it must be experience from gainful employment (that is, not work in the home or other unpaid work) and that it must be almost full-time work.
- In Denmark the size of the quota groups is fixed in advance, while in Sweden quotas are allocated in proportion to the number of applicants in each group.
- The Danish system allows a greater degree of differentiation and of direct contact between the applicant and the educational institution as the admission process takes place locally.
- The Danish admission system has been introduced without either extensive investigation or any great dela of fuss; the Swedish system, on the other hand, was introduced after protracted investigation and comprehensive discussions, In Sweden the debate has intensified as the rules have come into force and the effects have become noticeable. Both the design of the rules and the admission procedure itself have been exposed to severe criticism, In Denmark most people seem to have accepted the reform easily.

However, what is most important is the effects the rules have had on the recruitment of students. Broadly, it does not seem that the Swedish 25/4-rule has so far succeeded in recruiting more non-traditional students than the exemption procedure in Denmark. In both countries almost all non-traditional students who fulfil the requirements are admitted. Work experience has, as a whole, less importance in the Danish system than in the Swedish, even if the differences are probably smaller than is imagined. In the autumn of 1977 one third of the applicants in Denmark had work experience; in Sweden half of the applicants had. In neither country did all the applicants admitted reach the maximum number of points for work experience, which would lead to selection among these applicants in reality taking place on the basis of grade points only.

In both countries the new admission rules have brought about a rise in the average of admission; however, this rise is considerably larger in Sweden than in Denmark. The Swedish trend towards an increased imbalance between men and women has not been noted in Denmark. However, it is hardly likely that the Danish admission rules have led to a considerable change in the social composition of the student population. At the same time, we must acknowledge that we still do not know for sure if the Swedish reform has brought about such a change. In Denmark social change was, actually, not a primary goal of the reform; the reform was more concerned with modifying the influence of school grades and with providing a stimulus to a short period in work before academic studies.

3.3 Admission procedures in diversified higher education systems

In most countries the individual educational institution decides on procedures and requirements of admission to higer education. However, Sweden, Denmark and Germany have predominantly centralised admission schemes while others like USA, UK and Australia have left control of admissions very much in the hands of individual institutions and even academic departments. A central admissions proceedure reduces, of course, the possibilities of applying individualised selection methods like e.g. tests, interviews and biographical data. The problems raised by the admission of adult students are to a certain degree the same selection and assessment problems that exist with all students but are made much more acute by the attempt to measure 'motivation' in addition to or in lieu of achievement (Squires, 1978, p. 45).

The main problem in diversified admission procedures is, however, the method of measuring non-formal qualifications. The most common way is to make sure by means of some form of testing that the knowledge and experience the individual has acquired on a non-traditional route have sufficient substitution value. In many cases this method is complemented by interviews and biographical data.

The USA - with its widespread tradition of testing - has developed different ways of determining by some form of test whether an individual is eligible for access to a course of study or can be said to have enough knowledge to be given course credit. The considerable variation in admission policy in the USA will be exemplified here by lines of development.

Accreditation of prior learning in non-collegiate institutions

For many years, CASE (Commission on Accreditation of Service Experience) has evaluated training and education carried out

in the armed forces for transfer to education institutions. CASE has been succeded by the Office of Educational Credit (OEC) where it is extending its work to cover courses organized by businesses, unions, professional associations, and industrial and government training programmes.

College Level Examinations Program

Another way of earning college credit is the College Level Examinations Program (CLEP). This program was begun in 1963 to meet the needs of people who have acquired college-level knowledge but in unconventional ways through job experience, courses taken in the military or independent reading. Although the original purpose of CLEP was to open up channels to students who had acquired their knowledge nonformally "conventional" students are now making increasing use of it to gain up to a whole years credit before they start college. 1973 40 percent of all CLEP candidates were under 19 years of age (Trivett, 1975, p.23). According to a study by the National Institute of Education the degree is recognized by graduate programs and employers. Almost all of those surveyed who sought access to higher level-academic programs were able to enrol, and the degree yielded tangible benefits with employers for a majority.

Experiential learning

A third and different model is experiential learning - the granting of academic credits for non-formal learning. This procedure does not limit itself to work experience as a substitute for formal entrance requirements - ordinary upper secondary school education. Here experience can also be a substitute for part of a higher education program. If we consider the very extensive in - service training several companies give their white - collar staff as well as the fact that many pursue advanced studies on their own,there are clearly no particularly compelling logical reasons for confining substitution to upper secondary school education.

The evaluation of experiential learning raises a series of problems of both a theoretical and a practical nature. The method is expensive and requires that the procedures varies from person to person. The knowledge structure of higher education can be described and classified in concepts, theories and disciplines while experiential learning seldom can be classified in this way. It is also feared that the way experiential learning has been applied may lead to lowering of requirements.

In principle the testing of actual competence would render general eligibility rules like the Swedish "age + work" - rule superfluous. The eligibility requirement could instead be the passing of a test. In Sweden general testing was rejected not only because of technical and administrative problems but for basic ideological reasons. The most powerful objection was that testing would take place during a limited period of time and that a single exam would thus have a decisive importance for the individual. It was also feared that social bias would appear in test results. Nor even Sweden has, however, completely rejected the possibility of solving the question of eligibility assessment by some sort of test procedure, but no attempts have been made to develop testing further.

We have only given some hints of admission procedures in diversified higher education systems compared to a centrilized one like the Swedish. The use of testing and other individualized selection methods seems to be of critical importance. The development towards more diversified higher education systems and more heterogeneous student groups calls for more differentiated admission rules and procedures. Evaluation of work experience and non-formal learning is thus heavily dependent on the structure of higher education systems and admission procedures.

4. WORK EXPERIENCE AS A CRITERION FOR ADMISSION TO HIGHER EDUCATION - SOME SWEDISH FINDINGS

4.1 Various aspects: enrolment, attitudes and achievement

With the point of departure we have described above it is obvious that we cannot confine our description of Swedish experience to the aspect of recruitment. This is, incidentally, a common way of describing the effect of changes in admission rules; probably because they are easier to describe with numbers and diagrams. The total effect of altered admission rules is a function both of what students are recruited and of what education they go through, in what way and with what results. Therefore we try to give as broad a description as possible of the Swedish experience.

Findings reported here have been derived from different ways of valuing work experience for admission to higher education. The effects of work experience as an alternative route to higher education can be illustrated using the pilot programme with the 25/5-rule during the period 1969-77. As was mentioned earlier the experiment only involved students at the Faculties of Liberal Arts and Sciences. Evaluation of work experience as a general criterion for admission is limited as the new rules have only been in force since 1977. However, some trends have already made themselves felt and, in addition, there are the results from the pilot programme at the Schools for Social Work throughout the seventies. Finally we also present some findings from the experiment with programmes of advanced vocational technology (YTH), which is based on professional experience as a formal requirement for admission.

Regarding enrolment we pay special attention to how recognition of work experience has changed the composition of the student body with respect to age, sex and social background. Factors like the students' attitudes and study results are much more difficult to describe and analyze. However, it is in this area - study motivation, intentions and results - that considerable changes are assumed to take place when adult students are recruited to higher education. Recent development in Sweden has shown that traditional criteria of study success and behaviour

cannot be applied to non-traditional groups. In order to shed some light on these elusive factors we present results from studies which describe changes in study intentions and study behaviour, the students' own view of the value of their work experience for their studies and how this work experience is used in the teaching process. We try to analyze data on study results and 'drop-outs' in the light of this.

Changed admission rules are, however, only one of the factors which influence recruitment to higher education. Conditions on the labour market and in the underlying school system are other important factors. Which effects come from altered admission rules is difficult to determine, especially as changes have also taken place in such other respects recently.

4.2 Pilot programme with the 25/5-rule (1969-77)

An account of the pilot programme in broad outline has recently been published in Sweden (Kim, 1978 a). It is based on overall statistical material and a number of small follow-up studies from the first years of the experimental period. The report has led to an intense debate on the socially equalizing effects of the rules and on the function of higher education in relation to new groups of students. Partially, different interpretations made of the results can be explained by the shift which has taken place in the aims of widened access (see chapter 2 above). The following account is a summary of the contents of the report[1].

4.2.1 Enrolment trends

The number of students admitted under the 25/5-rule has been steadily increasing during the 1970's as the new regulations have got better-known and as the number of courses which can be taken has grown. By 1976 a total of 17 500 students had enrolled at the universities under this rule. During the same period students continued to enrol, as before, on the basis of individual exemption from the normal requirements (usually students without a complete three-year secondary education). At the end of the pilot period in 1976 one third of the total enrolment was benefitting from these special entrance arrangements to the unrestricted faculties of Liberal Arts and Science (Table 4:1).

It is, however, necessary to underline that students admitted under the 25/5-rule are not necessarily - and not even presumably - students with limited educational backgrounds. As foreseen, most of them have achieved a good level of education before entering the university. No assessment has yet been made of this, but early evaluation reports indicate that the proportion of students with only comprehensive education is not more than 10 percent. It is also likely that, in recent years,

---

1) A summary of the report will also appear in this form in European Journal of Education in the near future.

Table 4:1 New Entrants to the Unrestricted Faculties of Arts, Social Science and Natural Science, 1969-1976
(Percentage of students with different eligbility)

Eligibility	New entrants to unrestricted faculties							Students registred in distant courses 1974	Students registred in extra mural courses 1975
	1969/70	1970/71	1971/72	1972/73	1973/74	1974/75	1975/76		
Admitted by the 25:5 rule	4,8	6,4	8,3	11,0	15,2	19,8	22,5	24,9	22,1
Admitted by exception	4,1	4,2	4,0	5,4	6,9	12,6	12,1	7,7	5,3
"Normal" eligibility (or unknown)	91,1	89,4	87,7	83,6	77,9	67,6	65,4	67,4	72,6
Total	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0
(Total number of students)	(24095)	(22938)	(18105)	(18171)	(17321)	(19545)	(22002)	(618)	(1334)

adult students with "normal" eligibility (from three-year streams of secondary school) have enrolled to some extent under the 25/5-rule. This tendency appears plausible considering that the enrolment procedure is simpler for 25/5-students than for traditional students.

Most 25/5-students have enrolled to study social sciences. The increase in 25/5-enrolment during the 1970's was almost entirely in the Faculties of Social Science (Figure 4:1). This, of course, is a consequence of the fact that the majority of the courses opened up to 25/5-students belonged to the province of these faculties. Table 4:2 shows clearly the predominance of 25/5-students in the social sciences and on vocation-oriented courses. At the end of the experimental period one out of three 25/5-students began with such a vocation-oriented course while only 7% of traditional students did so.

Apart from vocation-oriented courses traditional academic courses in behavioural sciences (psychology, sociology and education) and business administration were the most popular among 25/5-students. Beginners' courses in these subjects sometimes had a majority of students with 25/5-eligibility.

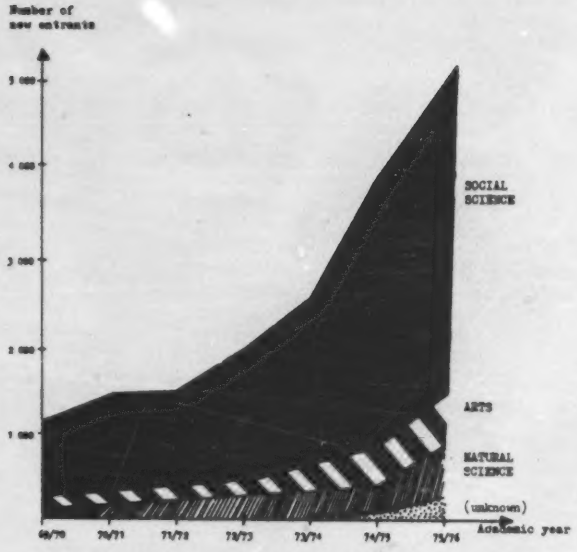


Figure 4:1 New entrants admitted by the 25/5-rule 1969-1976. Distribution by field of study (first year course).

Table 4:2 Distribution (in percentage) by field of study in the autumn term 1975. Comparison between 25/5-students and students with "normal" eligibility.

Field of study (first year course)	Eligibility 25/5-rule	"Normal"
Liberal arts (vocation-oriented courses)	12 (3)	31 (1)
Social sciences (vocation-oriented courses)	78 (26)	54 (4)
Natural sciences (vocation-oriented courses)	10 (3)	15 (2)
All faculties of Liberal Arts and Sciences (vocation-oriented courses)	100 (32)	100 (7)

On the other hand few 25/5 students studied subjects with comprehensive requirements of background knowledge such as economics, statistics and data processing. Only a small proportion studied subjects in the natural sciences, a tendency which also applies to secondary school leavers during the 1970's. That few students chose Liberal Arts subjects during the experimental period was, in part, a consequence of only a few such subjects being included in the pilot programme.

Differences in choice of study between 25/5-students and ordinary students thus depend to a great extent on the range of courses covered by the 25/5-rule and the aim of the reform being further vocational training for people in administrative and teaching professions. The amount of special requirements set up for various courses also seem to have influenced 25/5-students in their choice of subject.

Another distinctive characteristic of the pilot period is that most of the 25/5-students have been recruited to the city universities in Stockholm and Göteborg. This development counteracts the striving of regional policy and the desire for a broader geographical distribution of educational opportunity. It is, however, a natural consequence of the metropolitan regions having a broad economic structure and a larger base for recruitment, part-time students in particular. That geographical distance has been of great importance for recruitment can also be seen from the fact that the proportion of 25/5-students is often higher on courses devised to bridge geographical distance by alternative forms of distribution, e.g. distant courses and extramural courses (Table 4:1).

4.2.2 Students' background

The 25/5-students display the same sexbound subject choices as ordinary students. This also explains why the proportion of women increased gradually during the experimental period as the range of subjects widened and as more traditionally female subjects were covered by the 25/5-rule. Even the proportion of older students rose gradually, in part for the same reasons. The age group 25-29 years, which dominated initially, was reduced to slightly more than 20% by the end of the experi-

mental period. Roughly the same number of 25/5's were more than 45 years old when they began their studies. In Sweden the age distribution of students with traditional eligibility has also changed considerably during the seventies; an increasingly large proportion are over 25 when they commence their studies. Yet in the age group over 35 years more 25/5-students than traditional students enrolled during the period 1969-1976. That a gradual levelling out of 25/5-recruitment took place during the seventies with respect to age and sex is evident from figure 4:2. Women, and above all older women, were even in the majority at the end of the experimental period.

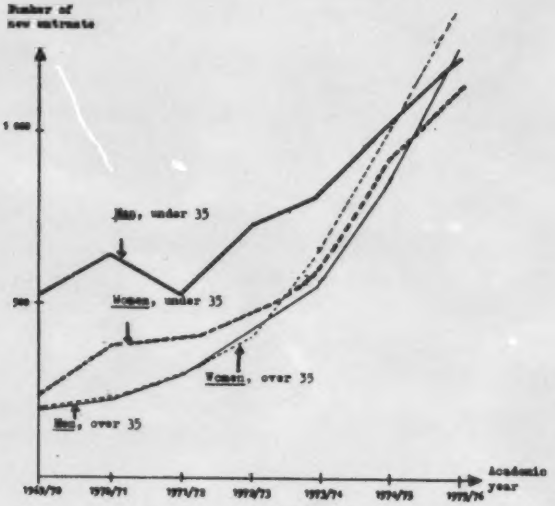


Figure 4:2 New entrants admitted by the 25/5-rule 1969-1976. Distribution according to age and sex.

The social background of the 25/5's differs considerably from that of traditional student groups. Individuals who grew up in a working-class environment make up a considerably larger proportion of those with 25/5-eligibility than of other students. Students who grew up in "university graduate" or white-collar homes are in turn less common in the 25/5-group. But it must be remembered that on account of age differences between

the groups the data refer to points of time differing in respect of occupational structure of the population as a whole. This can account for the differences to some degree, e.g. the higher proportion of farmers' children in the 25/5-group.

The distribution of the new entrants according to fathers' occupation (the usual way of measuring the social background of students in Sweden) is presented in table 4:3 and figure 4:3. The comparison with the population as a whole shows that students with a working-class background are still under-represented and white-collar occupations over-represented in 25/5-recruitment even if the distribution is considerably more equal than in the group traditional students.

The low proportion of students with an academic home background among the 25/5-students can in part be explained by the fact that around 80 percent of graduates' children have already enrolled in higher education - there just aren't so many left to recruit as adults. The essence of this is that it is primarily the "groups in the middle" which have benefited from the 25/5-reform. This is a result which recurs in the majority of educational reforms which aim at widening recruitment and increasing equality. This is often described as a fixed "order of arrival" - new groups do not begin to enrol before existing groups have reached something like "saturation". According to

Table 4:3 New entrants admitted by the 25/5-rule compared to students with "normal" eligibility and the Swedisn population in total. Distribution (in percentage) by social background.

Social background (father's occupation)	25:5-students (1969-1976)	"Normal"-eligibility students (1969-1976)	Swedish population in total (born 1948)
Farmers	13	7	14
University graduates	5	16	3
Directors, tradesmen	18	16	11
Senior white collar workers, officers, teachers	17	25	11
Other white collar workers	13	14	10
Manual workers	34	22	51
T O T A L	100	100	100

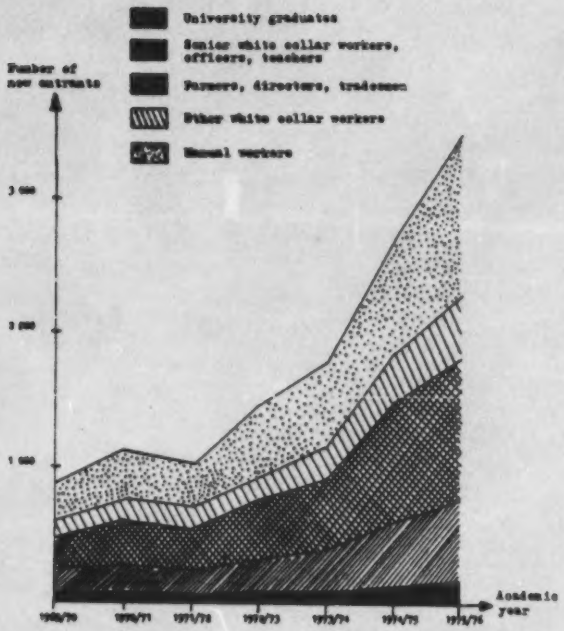


Figure 4:3 New entrants admitted by the 25/5-rule 1969-1976. Distribution by social background (father's occupation).

certain interpreters this will lead to education gaps increasing rather than decreasing. On the other hand the 25/5-rule has given many adults who otherwise wouldn't have had the opportunity of a higher education a chance. That other, more privileged groups have also benefited from the reforms is probably an unavoidable effect of educational reforms based on expansion.

However, a disturbing factor in the development in Sweden in the 1970's has been that while the 25/5-students have contributed to a more even social distribution among beginners in higher education the recruitment of students with traditional eligibility has gone in the opposite direction. Among the

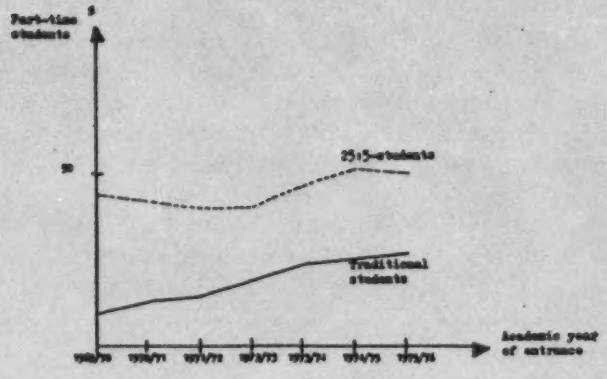
younger students selection has increased during the 1970's; the proportion of workers' children has declined at the same time as both graduate and white-collar groups have increased their share of enrolments in the free faculties. No great change has taken place; but there has, nevertheless, been a clear trend during the first half of the seventies, probably related to the worsened situation on the labour market for university graduates. Consequently the total effect is a restructuring rather than a complete change of the social composition of the student population. The question now being asked is whether the 25/5-rule may contribute to a new pattern of enrolment with increased social selection on the traditional route to higher education, direct via upper secondary school, compensated by increased recruitment of adult students from less privileged groups. Then it is also important to compare how these groups differ with respect to study orientation, results etc.

It is important to emphasize that the statistical data apply to the students' childhood and youth. The result would probably be different if the students' own social status on entry to higher education were considered instead. The Swedish statistics do not include such data but certain studies suggest that students who make their way to higher studies as adults are most often individuals who have already advanced on the social ladder. Thus it can probably be asserted that the 25/5-rule has affected "cultural mobility" and educational equality to a greater extent than "social" equalization.

4.2.3 Study motives and results

To give a fair description of study achievements it is necessary to consider students' study intentions, study intensity etc. The data in figure 4:4 show that there are considerable differences between traditional students and 25/5-students in these respects. For instance, as large a proportion as 70-80% of the 25/5-entrants do not intend to study for a full degree. Even among ordinary students there is a large proportion who only intend to take separate courses and that proportion has increased gradually as the average age of the new entrants has risen.

a. Part-time students



b. Students not aiming at a full degree

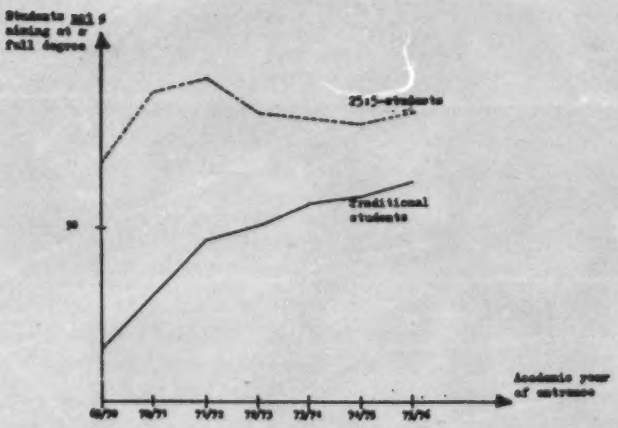


Figure 4:4 New entrants to unrestricted faculties of Liberal Arts and Science 1969-1976. Percentage of students studying part-time and students not aiming at a full degree.

It must be observed, however, that data presented in diagram 4:4 refer to students' intentions at the beginning of their studies, not their actual behaviour. It is also important to note that approximately one third of the 25/5-students never commence their studies or leave university without gaining any credit points at all. The corresponding figure for traditional students is about 20%. The statistics can appear perplexing to the foreign reader but are accounted for by the fact that in Sweden students both enrol in the university and register at the department. One out of ten never registers and others probably give up their studies at such an early stage that they cannot be considered to have begun studying at all. Including such students in the figures on wastage and drop-out rates does not present a true picture.

Students who have not gained any points at all despite serious efforts or who consciously begin their studies without intending to take any points are probably extremely few and far between. Among the early drop-outs are students who abandon their study intentions right at the beginning for socio-economic reasons or on account of insufficient background knowledge, disappointment or similar reasons. The reasons for such drop-outs are not insignificant when it comes to assessing the adjustment of university education to the new student groups; the fact that the 25/5-group exhibits a considerably higher proportion of such "early drop-outs" points to greater difficulties at the start for adult students. We do not, however, include these "non-credit" students in the following figures of proportions of students achieving different results.

On average only half of the 25/5-students continued to study after their first course. Students who begin with a vocation-oriented course do so to an even smaller extent; most often they leave university after completing the whole or part of this course. This ought not to be construed as a failure; the aim of these courses is to provide a short period of further training for people already occupationally active. However, it has also been considered that the courses ought to act as a gateway to more comprehensive university studies. This has not occurred to any great extent; less than 20% of the students

have continued to traditional university courses.

About 25-30 percent of the 25/5-students leave university with less than 20 credit points, which corresponds to the normal extent of a basic course of study (one term's full-time studies). These students have either stopped studying, voluntarily or involuntarily, without completing their first course or they have only completed a very short introductory course. Approximately every second 25/5-student has attained points equivalent to one to three terms' full time studies of pass standard. So far very few 25/5-students have taken a full degree; up to 1976 a total of rather less than 300 persons. Of the first year groups, 1969-1970, barely 10% have completed a degree. Consequently it is probable that only a few have gone on to post-graduate studies.

4.2.4 Comparisons of 25/5-students and traditional students

The conclusion that the 25/5-students cope less well with their studies than students with a traditional background cannot be drawn without further ado. Comparisons of that nature are, on the whole, very difficult to make on account of differences in study motives and intentions. A comparison must take account of such dissimilarities and must, on the whole, go "deeper" in its description than the overall statistical data permit. Accordingly the published report did not contain any comparisons of that kind. Nevertheless the debate came to revolve to a great extent around the issue of the 25/5-students' high wastage rate. The discussion indicated an unawareness in many quarters of the development which has been taking place at the unrestricted faculties during the 1970's.

Of course the increase in the numbers of 25/5-students is an important part of this change but traditional students have also changed their study intentions and behaviour substantially. As the average age of the newly enrolled has increased their study ambitions and actual achievements have grown more and more modest. For instance, it is now the rule rather than the exception that students at the Faculties of Liberal Arts and Science have a job in addition to their studies and tui-

tion is often given in the evening. As can be seen in figure 4:4 the proportion of traditional students aiming at a full degree has also declined gradually during the 1970's. Thus the differences between the student categories are slowly being rubbed out.

As a consequence the total production of credit points has declined steadily, as has the proportion of students taking "more advanced" courses. The same is true of the number of students completing a full degree (Figure 4:5). A decline in recruitment to postgraduate studies is now envisaged. It is important to view the data presented on 25/5-students in this perspective.

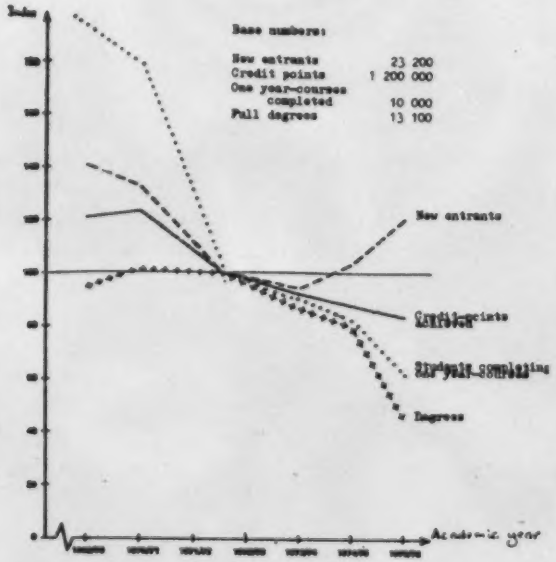


Figure 4:5 Development of the unrestricted faculties of Liberal Arts and Science during the 1970's: Summary figures. (Source: National Bureau of Statistics.)

There are a few small studies which have penetrated deeper into the 25/5-students' situation and results. Unfortunately most of them were carried out in the early 1970's when the 25/5-rule had been in operation for only two or three years. As mentioned earlier they did not reveal any differences in academic results between adult students and those admitted under normal regulations, as far as conventional outcome criteria were concerned. The pass-rates were about the same for groups with the same study goal and the same intensity of study (full-time/part-time). The experiences at the universities were reported as very positive; many were highly motivated and participated actively.

Since then - as has emerged above - significant changes have occurred in enrolment of 25/5-students as well as in the breadth of the range of courses on offer to these students. Fresher studies also indicate problems in various respects; adult students complain about shortcomings in teaching, socio-economic problems and insufficient background knowledge. Some studies indicate that 25/5-students at the universities often need more time to obtain the same outcome as traditional students. A study of adult students at the University of Lund (Kamienski, 1975) shows that students with 25/5-eligibility experience to a greater extent than other mature students study difficulties connected with insufficient background knowledge, defective study methods and other individual study factors (Figure 4:6). The 25/5-students who succeed best in their studies are consistently students with high study motivation and a clear study goal in view.

4.2.5 The importance of work experience for study choice and results

Unfortunately there are no studies from the experimental period with the 25/5-rule which describe the importance of work experience for study choice or results. However, it is obvious that the majority of the 25/5's have had vocation-oriented study motives; a good half of the students have reported that they are studying in order to better themselves in their occupations, to

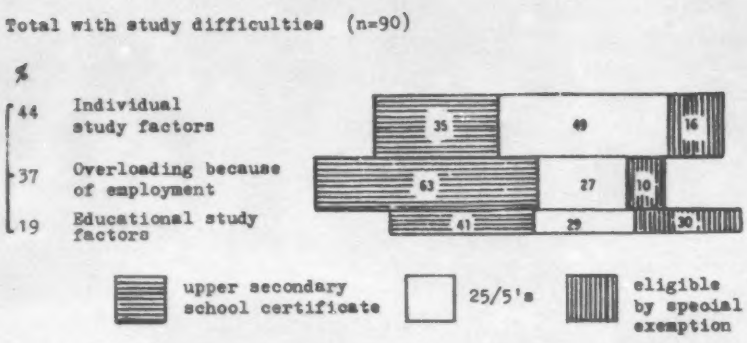


Figure 4:6 Adult students reporting study difficulties. Distribution by eligibility and origin of study difficulties (from Kamienski, 1975).

advance, switch occupation or find job at all. Among the occupational motives, those concerned with the nature of the work dominate. Wages seem to have played a subordinate role as a driving force. About 30 percent of the 25/5-students give personal interests or "knowledge for its own sake" as the principal motive for their studies. In this context it may be of interest to mention that for many 25/5-students in extra-mural courses university studies are an alternative to other form of non-formal adult education. It can also be assumed that the broadening of the range of subject choice towards more general, introductory courses has strengthened this spontaneous development in the direction of "non-credit" courses. This, then, is one explanation of the falling production of points.

Few investigations have tried to analyze the value of work experience for academic studies. In one such study (Hogland, 1978) non-traditional students, mostly part-time students studying single courses, have been asked if they felt their work experience has been of value for their studies and if their teachers have been able to draw benefit from the students' work experience in their teaching. Results show that quite a lot felt their work experience was of value for their

own studies. On the other hand, very few thought that their experience was of use on the course. We believe that this is typical of the situation in Sweden today; the adjustment to the new categories of students has not reached the stage that forms for making use of work experience in the teaching/learning process have been found.

4.3 The new admission scheme of 1977

The new admission rules, which meant an extension of the 25/5-rule to almost all higher education in Sweden, have only been in force for a little less than two years so far. Interest has been focused principally on the new rules for selection. At present data are only available on the number of students applying to and admitted by the computerized central admission system, which covers most of the degree programmes with restricted entry. Data refer mainly to the first round of admission in the autumn of 1977 (Kim & Simon, 1978). At this first round 10,700 of around 20,000 applicants were admitted. In spite of keen competition for certain programmes, such as teacher training and medical studies, some places were left unfilled on some of the newly introduced full degree programmes. Severe competition only occured for about 25 percent of the places and roughly the same proportion of students were admitted without any real competition at all.

Table 4:4 Applicants and admissions to degree programmes with restricted entry in the autumn of 1977.

Students background (quota groups)	Eligible applicants		Admissions	
	No.	%	No.	%
1. 3-4-year upper secondary school + possible work experience	15035	73	7898	73
2. 2-year upper secondary school + possible work experience	3159	15	1022	10
3. Folk high school + possible work experience	799	4	241	2
4. Others - e.g. 25/4's (of them only those eligible in group 4)	3569 (746)	17 (4)	786 (443)	7 (4)
5. Foreign education	1461	7	651	6
6. Admissions with priority etc			179	2
Total (gross)	24023	116		
Total (net, i.e. after subtraction of those with double eligibility)	20461	100	10777	100

The distribution according to quota group allows us to estimate the share of places in different fields of study taken by non-traditional students. Some statistical data are given in tables 4:4 and 4:5. Students from the two-year streams of upper secondary school, folk high schools and students admitted under the 25/4-regulation formed a small part (about 20 percent) of the total number of applicants in the autumn of 1977. In total rather less than 800 students were admitted under the 25/4-

Table 4:5 Students admitted to various sectors of higher education in the autumn of 1977.

Students background (Quota groups)	Technology and the Natural Sciences		Administration, Economics and Social work		Medical and paramedical education		Teaching		Culture and information	
	No.	%	No.	%	No.	%	No.	%	No.	%
3-4-year upper secondary school education, only grades (1 A)	1 064	26	959	25	122	14	225	16	185	45
3-4-year upper secondary school education, + possible work experience (1 B)	2 537	62	1 473	36	482	57	700	50	151	37
2-year upper secondary school education, only grades (2 A)	13	2	214	19	7	5	46	24	13	7
2-year upper secondary school education, gra grades + possible work experience (2 B)	63		423		26		211		6	
Folk high school + possible work experience (3)	8		137		13		72		11	
Others, incl. 25/4's without other eligibility ground (4 A)	53	2	253	11	61	14	51	7	25	8
Others, incl. 25/4's with other eligibility ground (4 B)	29		204		55		46		9	
Foreign education										
Admission with priority etc	324	8	375	9	76	9	39	3	10	2
T o t a l	4 091	100	4 044	100	842	100	1 390	100	410	100

rule and, of these, about half also had an education conferring eligibility.

Comparisons of the number of applicants and admissions in different quota groups are difficult to interpret. It is, however, obvious that in actual fact admission is not entirely proportional to applicants. This does not indicate that something is 'wrong' in the system but is a logical consequence of the rules on double eligibility and of guarantee rules and other practical features of the system.

As the students are distributed unevenly between different kinds of education the total figures are of limited interest. Table 4:5 shows the distribution of admissions to the five sectors for vocational education in which higher education has been administered and planned since 1977. In the table the students have been divided up into groups with and without work experience. It should be noted that this classification relates to the admission procedure; the fact that a student has been admitted on account of school grades plus possible work experience (quota groups 1 B and 2 B) does not mean that the applicant definitely has such work experience. This is only necessary for highly selective programmes.

Some very broad conclusions can be drawn from the figures about the students' subject choice. Non-traditional students apply primarily to programmes oriented towards social work, health care and teaching, i.e. programmes where competition is keen. The rather extensive special requirements set up for these programmes do not seem to deter adult students. On the other hand the proportion of adult students in technology and natural sciences is very low.

The new admission rules have not immediately led to extensive recruitment of non-traditional students to degree programmes; this was not expected either. However, what has occurred is that the composition of the traditional student group has changed substantially. As work experience has been given credit value in the selection process a shift has taken place to the benefit of older students, particularly in the highly selective area. For students with work experience lower grades are required and many adults with upper secondary school edu-

cation have been given a 'second chance' to enter a desirable education like medicine.

As a result a sudden change in age structure has appeared; the average age of new students on highly selective programmes has risen considerably. The average age of new entrants is now about 30 on many of these programmes. As an example of this, figure 4:7 shows how the age structure has changed at one medical school in Sweden. Naturally such a development has effects on both educational planning and the student's social setting as well as on assessments of future supply of and demand for graduates. The occupationally active life of a newly trained doctor or teacher is getting shorter and consequently the rules also involve diseconomics in the long run. Whether this trend of increasing average age will persist or not is, however, a question open to debate.

The new rules have had other unexpected effects. Although higher educational qualifications do not give extra points many students in medicine, for instance, have previously acquired academic qualifications. As usual the educationally strong draw the greatest benefits. However, this 'elite form of recurrent education' is probably a passing phenomenon. Double education can hardly be a profitable strategy for young people leaving upper secondary school today and wanting to enrol in highly selective study programmes. For these students the thing to do is to supplement schoolgrades with work experience as quickly as possible. Grades required from students applying to highly selective programmes direct from upper secondary school have risen sharply. In several cases not even the best possible grade in every subject guarantees a study place.

Our knowledge of what happens to young people not admitted to restricted study programmes is still very incomplete. In Sweden, as in most industrialized countries, unemployment is relatively widespread among young people. Obviously this creates problems for students wanting to gain points for work experience in order to apply to higher education. This is probably more true of girls and of young people in sparsely-populated areas and depopulation areas. The detailed rules for the cre-

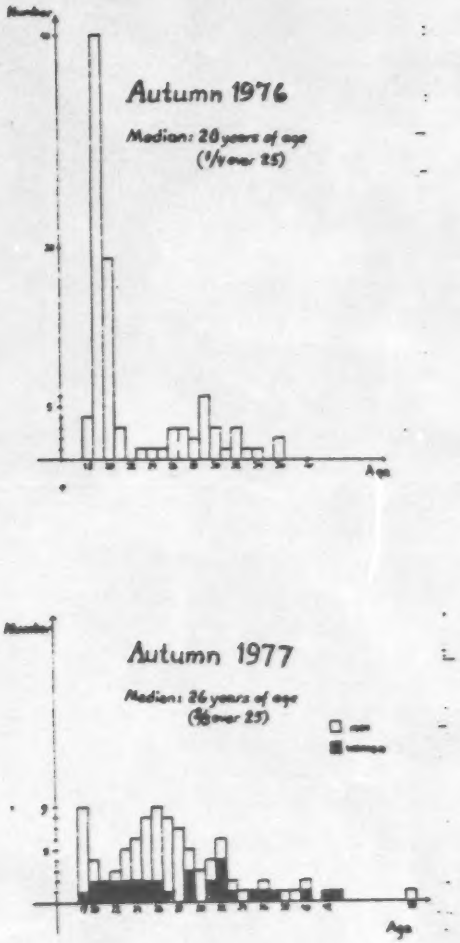


Figure 4:7 New entrants at the medical faculty of Lund University, autumn 1976 and 1977. Distribution by age.

diting of work experience probably worsen the situation for these young people. Figures of unemployment indicate, however, that it is not primarily upper secondary school leavers with good grades who suffer but rather young people in the 16-18 age group with only compulsory education. Upper secondary school leavers who want to go on to higher education are now taking some of the jobs which would otherwise have gone to these young people.

We still do not know what effects the new admission rules have had on pupils in the upper secondary school and on their attitudes to school work, choice of line and study results. During the seventies Sweden has experienced a gradual decline in the proportion of students on the academic lines in the upper secondary school. Pupils have chosen vocation-oriented lines to a greater extent. This tendency has continued in recent years; in particular certain two-year lines have increased their relative share. However, it is still uncertain to what extent this is a result of the new admission rules. The Parliament initially made a statement on the importance of following events to determine whether the reform gave rise to so-called 'tactical choices' in the upper secondary school. The development does not contradict the expectation that this has been happening to some extent. On the whole, however, the situation on the labour market has led to an increasingly large proportion of young people going on to upper secondary school. A great deal of these students choose vocation-oriented lines which must be supplemented with further study to lead on to higher education.

It is already clear from what has been said above that work experience has played a significant part in selection for programmes where the competition for places is keen. Despite the fact that all kinds of work experience are counted, it turns out that the applicants often have work experience related to the programme they apply to. On average almost half of all applicants have work experience which is given credit in the selection process. Even among applicants with a three-year upper secondary school education 40 procent had work experience in the autumn of 1978. In addition the proportion is in-

creasing as can be seen from table 4:6. The figures also show that women less often have work experience as an additional qualification than men do in spite of the fact that house work gives credit points. The possibility of recognizing military service probably gives male applicants a bit of a start.

Table 4:6 The proportion of applicants having work-experience in the autumns 1977 and 1978.

Quota group (Students' educational background)	Proportion (%) with work experience			
	1977 total	1978 total	1978 men	1978 women
1. Three-year sec. school	38	41	47	34
2. Two-year sec. school	52	58	76	50
3. "Folk high school"	69	77	86	71
4. 25/4-students	92	95	95	95
All quota groups	41	45	49	40

As a rule there are more applicants with work experience to study programmes where the competition for places is keen. As far as highly selective programmes are concerned, work experience is often needed to keep up with the competition. Thus any sex differences with regard to work experience, and longer periods of work experience in particular, are significant. The proportion of male and female applicants to medical and para-medical study programmes who had work experience of different lengths is shown in table 4:7. Evidently female applicants are disfavoured by the recognition of work experience. The result has been a decline in the number of female students not just in medical and para-medical education but also on some other long restricted study programmes. If the normal entrance age to higher education is moved to around 30 it will coincide with childbirth and the care of young children for many women. Recognizing work experience also means that existing inequalities on the labour market make themselves felt in selection for higher education.

Table 4:7 Applications and admissions to medical and paramedical education. Autumn 1978.

Length of work experience	Applicants by length of work experience		Proportion admitted in different groups	
	Men	Women	Men	Women
No work experience (or less than 15 months)	47	58	7	6
15 months - 2 years	14	10	15	14
2 - 4 years	18	13	24	19
More than 4 years	22	20	48	43
Total	100	100	20	15

One additional reason for women being disfavoured by the new admission rules is the extra points given for work in organizations (see section 3). Hardly surprisingly this has given male applicants a start. For organizational activities are a field dominated entirely by men, especially when sports clubs of various kinds are included. Even if points for organizational activities have not been extensively used on the whole - only one in ten of the applicants has cliamed this qualification - they have been of decisive importance in selection for highly selective programmes. Furthermore the trend has strengthened between the autumn of 1977 and the autumn of 1978. Of those admitted to highly selective programmes almost 30 percent had credits of this kind. These extra points seem to have favoured male applicants in admission to programmes dominated by women thereby contributing to an equalization. But this is not compensated for by a corresponding advantage for women applying to programmes dominated by men. Since this does not tally with strivings to redress inequalities between the sexes the adverse effects have already given rise to proposals to change the rules.

Finally, we will make some comments on the outcome of the new admission scheme in the light of the aim of promoting recurrent education. Intentionally this would take place in two ways: 1) by stimulating young people to defer their academic studies and to alternate education and employment and 2) by opening up

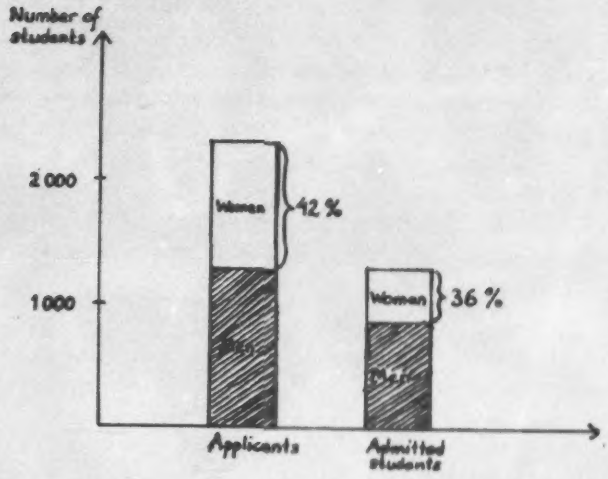


Figure 4:8 Applications and admissions with points for organizational activities. Autumn of 1978.

new routes to people previously excluded from higher education. This can be illustrated in the following way:

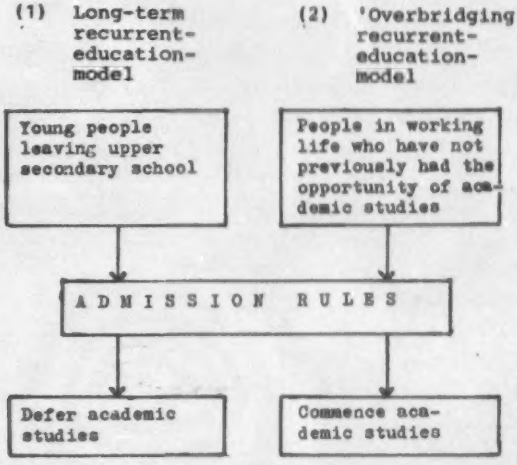

(1) Long-term recurrent-education-model
(2) 'Overbridging' recurrent-education-model
Young people leaving upper secondary school
People in working life who have not previously had the opportunity of academic studies
ADMISSION RULES
Defer academic studies
Commence academic studies

Figure 4:9 Admission rules and the promotion of recurrent education (from Rubenson, 1979).

The new selection rules have promoted model 1, i.e. young persons' postponement of academic studies, very effectively, at least as far as the highly selective study programmes are concerned. However, in Sweden it has been said that recurrent education is to constitute an alternative to other, more traditional ways of completing a higher education. It can now be asserted that the recognition of work experience has enforced a system with more or less obligatory period of work before certain higher education programmes.

A development in the direction of recurrent education is mainly seen as a means of achieving greater social equalization in the education system. Consequently the measures may, of course, not lead to increased social selection among young people who defer their academic studies. Attention has been called to this kind of danger because, among others, the system of study financing in Sweden has not been adapted to the conditions of adult students. Even in model 2 trends towards the classic pattern that social equalization is least evident on the most desirable prestige programmes can be seen in the results. So, on the whole, we must be doubtful about the socially equalizing effects of the new admission rules, for the time being.

How are study conditions affected and what success do the new groups of students have in their studies? It is yet too early to ask these questions. The majority of restricted programmes extend over 3-5 years. As a rule the experience reported up to now only concerns the introductory, more theoretical, stages of e.g. medical education. Insufficient study experience, out-of-date background knowledge and difficulties combining studies and employment in addition to family commitments are reported to cause older students problems. It is hoped that these will be compensated for by greater motivation and maturity and by greater opportunities of linking theory to previous occuptional experience.

The Schools for Social Work have a longer period of experience of students with work experience as a substitute for formal academic entrance requirements as the 25/5-rule has applied

there since 1970. There students with 25/5-eligibility have made up 10 percent of new entrants throughout the seventies. The average age of these students has been a little over 30 and most have an extensive period of employment behind them, often in social work. Early evaluations revealed that the adult students had greater difficulties than traditional students in managing their studies as measured by the number of exams passed. The proportion not passing their exams during the first term was twice as large for the 25/5's (40% as agsinst 20% for other students). Even if most were pleased with their studies many wanted compensatory education and study advice. When the students were followed up later on in their course (after 2 years' studies) it turned out that the differences in study results had decreased. The conclusion is that the difficulties some experience at the beginning of their studies are overcome to a great extent further on in their course of study. The 25/5-students felt that their work had been of value to them in their studies, not only in the more practically-oriented ones. In that respect there was a clear difference between the 25/5-students and others (see table 4:8).

Table 4:8 Opinion of the value of work experience for studies among different student groups at the Schools for Social Work. (Percentage of students with different eligibility.)

The value of work experience for studies	Eligibility		
	3-year upper secondary school	2-year upper secondary school	25/5-rule
No previous work experience	71	40	2
Work experience makes studies easier	18	27	81
Work experience does not make studies easier	11	33	17
Total	100	100	100

Source: Öhrn (1973)

As an experiment the Schools for Social Work have also given extra points for work experience related to the social field in their selection of students with traditional eligibility. An investigation with the purpose of studying the connection between school grades and work experience on the one hand and study results on the other reached the following results (Eliasson, 1973). Students with high grades generally had better study results than students with low grades. However, the older the students were and the longer the work experience they had behind them, the less study results varied with school grades. The study results of those with credit for work experience did not differ in an interpretable way from other results. According to the investigation long work experience was paired with good study results if school-grades were high but to poor results if grades were low. Thus the results suggest that work experience does not compensate for low grades as far as study success is concerned. Nor was it possible to establish any significant differences between students with different kinds of work experience. Particularly relevant work experience did not seem to have a better predictive value for studies than other work experience.

What conclusions can be drawn from this? The results show that a formal upper secondary school qualification is not a necessary condition for carrying out academic studies, but that students without formal school qualifications often have problems in their studies, mostly at the start. There can be many different reasons for the difficulties being overcome later on. In part this can depend on the students adapting gradually to the study conditions, but it can also be explained by the gaps in their theoretical knowledge being filled out gradually and by increasing opportunities to make use of their practical experience later on in the course of study.

The value of work experience to those who have both a traditional school education and work experience is a more complicated question. The picture is certainly complicated by the fact that their school knowledge is becoming obsolete at the same time as their work experience is increasing. Obviously it is not possible to simply assume that lower grades are compensated

for by work experience. Here we touch upon the problems of interaction between work experience and the academic structure of knowledge dealt with in section 5.

4.4 Programmes of advanced vocational technology (YTH)

In the academic year 1975/76 new programmes of advanced vocational technology (YTH) were introduced as part of the Swedish reform of higher education (cf. Dahllöf 1977). The purpose of these programmes was to provide opportunities of further education for a group of people who had previously had few possibilities of praticipating in higher education and to meet the demand of the labour market for skilled and educated personnel. These programmes turn in the first place to skilled workers in industry who wish to add theoretical knowledge to their practical experience from working life.

The first experimental period focused on six different branches of industry, viz.

- clothing industry
- food industry
- paper and pulp industry
- iron and steel industry
- wood industry
- engineering industry

The experiments were organized in eight places including both traditional, established university and college towns and new centres of higher education. The number of local units, study groups and study places in the first three academic years is shown in Table 4:9.

Table 4:9 Intake capacity of YTH during the first three academic years.

Academic year	Local units	Number of groups	Study places
1975/76	8	11	330
1976/77	9	13	390
1977/78	12	17	510

YTH is a post-secondary education and the entrance requirements are related to the rules for entrance to higher education in general. The basic requirement remains a minimum of two years' completed upper secondary school studies. There are, however, some modifications. A requirement specific to YTH is that the applicant's upper secondary qualifications must be relevant to the YTH line applied for. The applicants may also have been apprenticed within the sector concerned. A further entrance requirement is a minimum of four years' work experience from the industry concerned.

As a rule the study programmes last one had a half academic years. The programmes are basically theoretical. Three groups of subjects can be distinguished. The main emphasis is on branch specific subjects. About 15 percent of the time is spent on subjects like mathematics, science and technology; they mainly support the branch specific subjects. Finally, there are certain subjects of a more general character such as languages, economics and administration. These subjects are common to all lines of study and take about 15 percent of the time. Some time is reserved for remedial instruction etc.

There were 593 applicants for the 330 YTH places in the first year. Three of the courses - clothing, iron and steel, and wood - were undersubscribed and altogether 277 students entered the programmes. Only 16 of them were women. On average the students were about 30 years old. Half of them were between 26 and 31 years old. The youngest was 21 and the oldest 47 when they began. The mean of relevant occupational experience was nine years; 20% had 14 years or more and 10% had the minimum requirement of 4 years.

A consequence of the admission rules is that the students' theoretical background is very heterogeneous. About 65% of the students had attended an occupational school or some comparable institution. The rest had received in-service training or been apprenticed in the job sector concerned. The theoretical core varies considerably in the different kinds of vocational training which the students have attended. An impression of the students' theoretical competence can be gained from their

basic education. 58% of the students had up to eight years primary school, 20% nine years comprehensive school, 14% lower secondary school and 7% upper secondary school. Their familiarity with studies also varies greatly. No more than 27% of the students had finished another education less than six years before the entrance of YTH. 8% had not participated in an education of any length for 20 years.

The differing theoretical qualifications have become evident in the teaching of mathematics, physics and chemistry. In mathematics, for example, tests at the start of the course showed that 43% of the students did not exceed a standard of knowledge corresponding to the first six years of compulsory schooling while 8% held a standard corresponding to secondary school. However, it should be noticed that after two months about 60% of the students had reached a level of performance corresponding to at least eight years of compulsory schooling as compared with 11% at the start. This remarkable progress indicates that the students had a greater fund of passive knowledge at the start than was indicated by the test results. However, they needed a considerable warming-up in terms of repetition and remedial treatment; in turn this called for great flexibility in teaching during the first term. This was not always foreseen in the plans and caused a great deal of tension during the first period of the experiment. Unfamiliarity with studies was also a great problem for the students. They sometimes both had a poor study technique and found it difficult to concentrate. It was particularly difficult for the students to relate theoretical subject matter to their occupational experience.

In the preparations for the YTH it was planned that three main categories of teachers - secondary school teachers, university teachers (mainly from the institutes of technology concerned) and teachers from industry - would take part in the teaching. It was, however, difficult to recruit teachers from working life, particularly when they were asked to teach extensive sections of the courses. Since these teachers also had their permanent duties, the time-table had to be adjusted accordingly. It was also difficult to gather all these teachers to joint

planning sessions. In spite of these problems the teacher from industry are of great importance for the YTH education, but their co-operation makes particular demands on planning.

Another problem has been textbooks and teaching aids. They are often constructed to be used during a longer teaching period than is available to the YTH students. Furthermore, the textbooks usually assume theoretical knowledge which several YTH students lack. In contrast, they do not take account of occupational experience.

We have tried above to pinpoint some problems which arose during the first periods. Of course, all of them do not exist in all places and on all study programmes, but they are exemples of the kinds of problems that may be encountered.

Attempts have been made to adapt educational content and design specially in view of the target group and to build on the students' work experience and not on theoretical background knowledge. This adaptation seems to be successful since as many as 93% of the 277 students who began their YTH-education in the autumn term 1975 passed their course in 3 terms.

The requirement of relevant professional experience means that the YTH-students have a relatively homogeneous background of work experience. But within this area the actual experience varies a great deal. This has turned out to be a problem when attempts are made to build on work experience in concrete teaching situations. As a rule students also have general work experience. The students' life experience also varies a great deal on account of the considerable age differences. This experiences often mean that the students are very highly motivated in their studies but they have often been a problem too. This is principally true of the students' very varied study experiences and expectations.

In the so-called supporting subjects, e.g. mathematics and physics, it has been difficult to replace theoretical background knowledge with work experience. On the whole the use of work experience makes great demands on specially adapted textbooks and teaching aids. Another lesson is that it is worthwhile attaching teachers with experience of work in the branch in question.

These findings from the use of work experience in YTH-education are mainly based on results from the current evaluation of the YTH pilot programme and represent principally the outcome of interviews with leaders of the pilot scheme and teachers. Some time after completing the programme students were asked how they considered their work experience had been tapped in the teaching and learning process. Results are shown in table 4:10.

Table 4:10 Replies to the question, 'How do you consider your practical experience was used in YTH-teaching?'

Very badly	Quite badly	Neither well nor badly	Quite well	Very well	TOTAL
6	22	34	31	7	100

As is seen the distribution round the neutral alternative 'neither well nor badly' is even. This points to difficulties in viewing practical experience as a clear-cut concept. The students have also been asked in what contexts their practical experience was used and what should be done to use their practical experience. The replies are presented in Tables 4:11 and 4:12.

Table 4:11 Replies to the open-ended question, 'In what contects (subjects, sections, working methods) do you consider the best use was made of your practical experience in the teaching process?'

Branch-specific subjects	70
Group work	26
Subjects concerning working life	16
Practical sections, laboratory work	13
Special work, project work	12

Table 4:12 Replies to the open-ended question, 'What do you consider should be done to use best the practical experience YTH-students have?'

Group work	38
The students act as 'help-teachers'	28
Dialogue between students and teachers	13
Practical examples and exercies	12
Students' participation in the planning of the training	10

(The questions were open-ended and have been answered by 62% and 52% respectively of the students who filled in the questionnaire. In the tables the categories mentioned by at least 10 students have been included.)

It is principally in branch subjects the students consider work experience of value; subjects concerning working life are also mentioned. Students' work experience has mostly been of use in working contexts where they exchange experience with one another or apply their knowledge. These general findings are confirmed by the students' replies.

In conclusion we can say that YTH is an education whose starting point has been that its students should have relevant work experience but where advanced theoretical background knowledge is not required. Attempts have been made to adapt educational content and design to these conditions and the large number of students who have passed the course of study suggests that these attempts have been successful. Eligibility and selection rules have led to a very heterogeneous student body with respect to age, background knowledge and study experience. However, the group is relatevely homogeneous in its work experience. The students' varied background knowledge and experience have demanded much planning and special considerations regarding the educational process, material and teachers. The students themselves consider it is primarily in branch-oriented subjects and in study work where experience is exhanged or applied that work experience is tapped.

To conclude we would like underline the differences between this type of work experience in higher education and findings related above from the 25/5-scheme. Evidently preconditions for using work experience as a substitute for formal academic entrance requirement differ substantially. These problems will be developed further in the following section.

5. THE EFFECTS OF WORK EXPERIENCE ON THE EDUCATIONAL PROCESS - SOME THEORETICAL CONSIDERATIONS

5.1 A General Framework

The aim of this part of the paper is to analyze the question of the interchangeability of work experience and theoretical background knowledge from more purely theoretical points of departure, namely:

A The changeable adult learner

The analysis must start from the idea of the changeable adult learner. Two things are meant by this. First, it is obvious that the notion adult learner embraces an enormous variation in and multiplicity of student backgrounds. Second, we assume that the individual has a potential for development; this means that the question of interchangeability must be seen as a process.

B Experience as a basis for higher studies and critical thinking

Moreover the substitution problem presupposes an examination of the concept of experience. What type of learning takes place through experience? How is it related to the acquisition of knowledge in formal schooling and the concept of critical thinking?

C Organizational frames and the function of work experience

Furthermore the question of substitution must be related to organizational frames, pedagogical methods and curricular content. The educational function of work experience in an Open Access system seems to differ in many respects compared with educational systems where work experience gives qualifications additional to the formal entrance requirements.

D Kinds of interchangeability

Theoretically we can imagine the following possibilities concerning interchangeability, viz.

a) strict interchangeability of background knowledge and work experience, the adult learner has equivalent knowledge and skills compared with traditional students, i.e. work experience is a prognosis factor of the same capacity as marks from upper secondary schooling. This situation only holds for courses and study programmes without special entrance requirements.

b) relative interchangeability of background knowledge and work experience. Work experience together with informal study traditions has conferred general aptitude for academic studies on the adult learner. Shortcomings in certain areas of background knowledge can be off-set by special entrance requirements, increased motivation and maturity and by special study supporting measures in the instructional process.

c) no interchangeability of formal background knowledge and work experience. Increased study motivation and special supportive measures cannot compensate for insufficient background knowledge.

E Degree of interchangeability and the educational adaptation

If strict interchangeability applies, the new student groups ought to be able to manage their studies on the same conditions as traditional students. If the interchangeability is relative or non-existent the individual and the institution are forced into a process of adjustment in which adult students with insufficient study skill run the risk of being both neglected and rejected.

F The exclusion of the adult student

The risk of such an exclusion is particularly large in a system characterized by traditional academic values

and outlooks concerning curricular content, working methods and examinations.

G The need for organizational renewal

In order to avoid such a development basic values and outlooks in higher education must be changed. It is not sufficient to implement changes on the surface level such as refreshing subject content and modernizing traditional instructional forms. Such measures might disfavour the learners without formal schooling to the advantage of the traditional student groups. This is especially true if the didactic changes are made in isolation from the specific learning context of a certain educational structure. In order to avoid such a development it is necessary to give priority to selective measures aiming at positive discrimination to the benefit of adult students. Faculty development has to be related to external supporting measures, i.e. social and financial support to individual students.

H Contradictory traditions of knowledge in higher education

However, the adaptation of universities and colleges to a broader and more heterogeneous student clientele is not simply a question of study organization and educational frames. Another important factor is the traditions of knowledge and scientific paradigms existing in different subjects and disciplines. Teachers and researchers who in their everyday work are bearers of scientific outlooks are nowadays more often confronted by students who to a great extent have acquired knowledge on informal routes to higher education. One important research task is to illuminate how this encounter takes place in different institutional settings. Fundamentally we must ask ourselves whether it is essentially a question of two incompatible traditions of knowledge, the information assimilation model and the experiential model, or whether a third standpoint, a mixed form of knowledge tradition could be developed.

5.2 The Changeable Adult Learner

Today we lack pedagogic points of departure for research on adult students in higher education. Up to now questions concerning the composition of student groups and the adult learner's social situation and perceived study problems have been at the focus of research. A considerable proportion of these observations are based on follow-ups of concrete study programmes or courses. The difficulty of developing an overall research strategy originates not only in the shortage of resources but also - and just as much - in the very complex nature of the problem. There is a strikingly large variety of background and experience in what we call the new student groups. Allen has given a vivid description of the vast number of lifelong learners knocking on the open door:

> Standing as a counselor at the open door of such an institution, I am exposed to the full range of human experience; for our undergraduates include:
>
> not only high school dropouts, but valedictorians.
> not only common laborers, but presidents of multimillion dollar corporations.
> not only housewives, but the past-president of the local chapter of NOW.
> not only part-time, but full-time students.
> not only those having difficulty with English, but authors of scholarly books and articles.
> not only those merely hoping to pass their present course, but those aspiring to doctorates in medicine and other areas.
> not only teenagers, but grandparents and retirees.
> not only draft resistors, but veterans.
> not only hippies, but hard hats.
> not only the handicapped, but professional athletes.
> not only high school students, but college faculty and high school, elementary school, and nursery school teachers.
> not only children of poverty, but children of our elite.
> not only the newly wed, but the newly divorced.
> not only state police officers, but ex-convicts and reformed drug addicts.
> not only a chief administrator of the local state hospital but recent patients there.
> not only employees of virtually every major area business and industry, but the unemployed and welfare recipients.
> ... and this is just a beginning ...

Allen (1973) pp 2-3

The considerable spread in the students' social background and learning experiences makes it increasingly difficult to define the typical non-traditional or adult student. The question is whether drawing a clear distinction between traditional students and adult students is even productive. To take an example from close at hand, the position in Sweden now is that almost two thirds of all newly enrolled students are over 25 years old. Consequently the problem is perhaps no longer adapting the curricular content and teaching methods to the demands of more or less typical adult students. Rather it is an educational adaptation of a much wider scope in order to suit an increasingly heterogeneous student group. We are facing the traditional educational dilemma of trying to satisfy simultaneously the needs of several different groups. The spread in the composition of the student groups also means that a rich spectrum of work experience or of life experience in general is brought to the class. The way this experience is recognized has direct consequences for the teaching and learning process.

Are there any characteristics of adult learners apart from their wide spread of background and experience? One feature which often recurs in descriptions of adult learners is that they often have pragmatic or job-related study motives. They study either to increase their on-the-job competence or to become better equipped for new tasks. Their study motives seem to be pragmatic and related to concrete life problems. "Adult learning is motivated primarily by the desire to solve immediate and practical problems. They are interested not so much in storing knowledge for use at some future time as in applying knowledge to life goals that seem important to them" (Cross, 1978, p 5). Having said this, it must, of course, also be stressed that there are a number of other study motives for adult students.

Another typical feature of adult students is that they often combine study and work. Many of them are permanently trying to cope with a conflict between the student role and other life roles. According to Medsker et al (1975), "this obviously means that they were pursuing an educational program on top

of heavy employment obligations" (ibid, p 45). In the Medsker study on extended university programmes the authors conclude on the barriers to learning,"All in all, the greatest barriers for Would-Be Learners, aside from cost, seem to relate to the factor of time. Not enough time, full-time attendance, job responsibilities, and home responsibilities all seem to be ways for respondents to indicate that their present situation does not leave enough free time for learning" (ibid, p 48).

However, the problem of the severely strained time budget applies not only to would-be learners but just as much to adult learners who have entered higher education. Shortage of time when linked to deficient study methods need not necessarily lead to major problems or drop-outs in every instance; a sufficient indication that the system is malfunctioning is that the student is constantly obliged to learn the most 'useful' bit of knowledge without having any opportunity for a deeper examination of a certain issue, a critical analysis or the exchange of experience with others. Reference can be made to Hopper & Osborne's(1975) analysis of ritualized and innovative study styles. They assume that adult students can usually be divided into two subgroups; adults pursuing a ritualized learning style and adults who have an innovative learning style. The groups differ in relation to their conceptions and expectations of the study situation. The ritualized learning style is form dependent, or should we say, field dependent. The "good study habits" become more important than academic learning and critical thinking.

> and when such "good study habits" take precedence over studying, such behaviour constitutes a ritual. Another aspect of student ritualism is an overly developed sense of gratitude towards the staff and the system for being selected to fill a scarce place. This involves a tendency to accept as true and helpful whatever the lecturers say, no matter how mediocre or unsubstantiated. It leads to an attempt to please, to regurgitate conventional wisdom, and to value "memory" at the expense of thought.
>
> Hopper & Osborn (1975), p 128

The individual student's conception of his role as a learner is a result of a lifelong process of socialization in the world of education. It seems likely that on-the-job learning or informal study traditions develop other learning attitudes than formal schooling. The impressionistic images of the adult students are contradictory. On the one hand,the adult student is described as humble and submissively adjusted to the agenda of a certain instructional context. On the other hand,he or she is labelled as being an active participant in the educational process with the competence to influence, decide and take responsibility.

Another way of classifying the students is based on different ways of viewing study skill. To a great extent traditional educational psychological research has seen aptitude as a predictor of study results and study progress. Another approach is to see aptitude as a cognitive process. According to Glaser (1977) much of the previous research has focused on the notion of aptitude as psychometric prediction and as fixed characteristics. Now interest focuses more on the process and different forms of educational adaptation which can change and develop a particular aptitude, not least from cognitive points of departure. We see the emphasis on the cognitive process and the capacity for cognitive changes as an important point of departure for our analysis.

5.3 Experience as a basis for higher studies and critical thinking

In the countries which have made work experience an admission qualification for higher education the concept of experience has often been regarded as something positive in the broad sense. We also believe that an increased emphasis on work experience can lead to a renewal of higher education from within. At the same time it is obvious that all experiences cannot be useable building blocks in the individual's own learning process. Dewey writes thought-provokingly on this in his book Experience and Education:

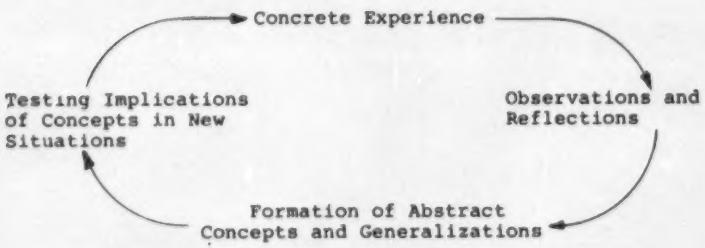
> The belief that all genuine education comes about through experience does not mean that all experiences are genuinely or equally educative. Experience and education cannot be directly equated to each other. For some experiences are mis-educative. Any experience is mis-educative that has the effect of arresting or distorting the growth of further experience. An experience may be such as to engender callousness; it may produce lack of sensitivity and of responsiveness. Then the possibilities of having richer experience in the future are restricted.
>
> Dewey 1971, pp 25-26

And further down on the same page:

> Again, experiences may be so disconnected from one another that, while each is agreeable or even exciting in itself, they are not linked cumulatively to one another. Energy is then dissipated and a person becomes scatterbrained. Each experience may be lively, vivid, and "interesting", and yet their disconnectedness may artificially generate dispersive, disintegrated, centrifugal habits. The consequence of formation of such habits is inability to control future experiences. They are then taken, either by way of enjoyment or of discontent and revolt, just as they come. Under such circumstances, it is idle to talk of self-control.

How does learning through experience take place? Kolb & Fry (1975) have sketched out a model of experiential learning or learning through experience.

THE EXPERIENTIAL LEARNING MODEL


Concrete Experience
Observations and Reflections
Formation of Abstract Concepts and Generalizations
Testing Implications of Concepts in New Situations

From D.A. Kolb and R. Fry, "Toward an Applied Theory of Experiential Learning," in Gary Cooper, ed., Theories of Group Processes (London/New York: John Wiley & Sons, 1975).

Figure 5:1. The experiential learning model.

The model takes for granted that learning through experience is not just a question of piling up loose or disparate impressions. It is just as much a matter of a gradual development of new concepts in order to cope better with certain problems in the individual's life situation. What distinguishes learning through experience from academic learning is the very source of concept development and knowledge. In the latter case the concepts and knowledge are formed into general principles, which have been shaped through theoretical reflection within certain research traditions. In the former case the knowledge grows out of the individual's direct and concrete experiences of social reality. Academic knowledge seems to have a stronger component of deduction while experience is characterized by induction.

Coleman (1977) has analyzed the differences between experiential and classroom learning. He makes a distinction between learning in school (information assimilation) and learning outside class (experiential learning). The information assimilation process is arranged into a series of learning steps, viz. 1) transmitting a general principle through a symbolic medium (mainly words and figures in textbooks), 2) "assimilating and organizing information so that the principle is understood", 3) to give possibilities to "infer a particular application from the general principle" and 4) "moving from the cognitive and symbol-processing sphere to the sphere of action". This is what we called above the deductive pattern of academic learning.

Experiential learning takes place in almost the reverse sequence. "It does not use a symbolic medium for transmitting information, and information is in fact generated only through the sequence of steps themselves. In the first step one carries out an action in a particular instance and sees the effects of that action. This is like the classical experimental animal learning, in which an animal carries out an action and experiences the consequences, ordinarily termed a reward or a punishment" (ibid, p 51). Concrete actions and experiences form a basis for the individual's concept formation and the

accumulation of knowledge into general principles. The process of cognitive development is woven into everyday life and work. The generation of principles is, according to Coleman, the weakest point in experiential learning. Analogously we can say that the step from a general principle to a concrete social reality is the weakest point in an information assimilation model. Individuals differ in respect to their ability to develop principles and models from experiences. Obviously, there is also a striking variation in the learning content of different occupational roles as far as cognitive development is concerned.

Another problem concerns the role of critical thinking in the traditional academic model (information assimilation) and in experiential learning. How do we define critical thinking and reflection in the two approaches? What kind of criteria do we use? In the academic community each subject has its own criteria and knowledge traditions. Even if there are differences between different subjects it is obvious that the whole academic community is built on a cognitive structure of different methods, rules and criteria, all regulating in one way or another what are defined as critical approaches from time to time. In working life, on the other hand, practical value seems to be a more important criterion than critical thinking in the academic sense.

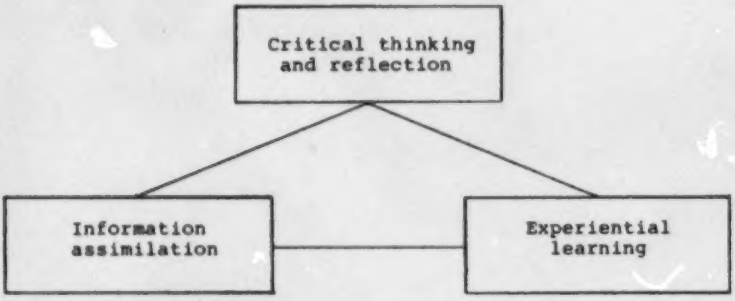


Figure 5:2. The relations between critical thinking, information assimilation and experiential learning.

A difficult and delicate problem is what kind of relations we can assume between the different concepts in the figure. Is experience a sound basis for critical thinking? Or is too much experience an obstacle to reflection and analysis from an academic point of view? It goes without saying that unreflected experience must be a weak point of departure for critical thinking, especially if we relate the concept to research traditions and knowledge ideals within a certain subject.

Behind these questions are two different outlooks and perspectives concerning the content and function of higher education. We can also speak of two different traditions of knowledge: an academic tradition stressing both critical understanding and the mastery of the subject's knowledge content, and the student's capacity to apply critically the rules, procedures, and research methodologies existing in a particular subject. Thus it is a question of socialization into a paradigm or scientific outlook. The other tradition is founded in the main on experience-related learning. To a great extent it's starting point is the thesis that every individual can learn more and develop his own level of competence. In the experiential tradition just methods and modes of working seem to be the central issue both in study circles and in everyday learning in different forms.

Thus the question of the interchangeability of formal background knowledge and work experience is a matter of concept formation and cognitive development on, principally, an inductive and deductive basis. Consequently we must form an idea of the differences and similarities between the knowledge called for in formal entrance requirements and work experience as well as between them and academically oriented knowledge in higher education.

One way of comparing the three types of knowledge is to sketch a simple knowledge pyramid. It goes without saying that the knowledge structure varies enormously within different subject areas and academic traditions. Each subject, however, has it's

formal and conceptual aspects as well as factual and experience-related components. The different levels in the pyramid represent different degrees of abstraction and concretion in knowledge content. In our model,work experience, formal entrance requirements and academic knowledge are described by circles.

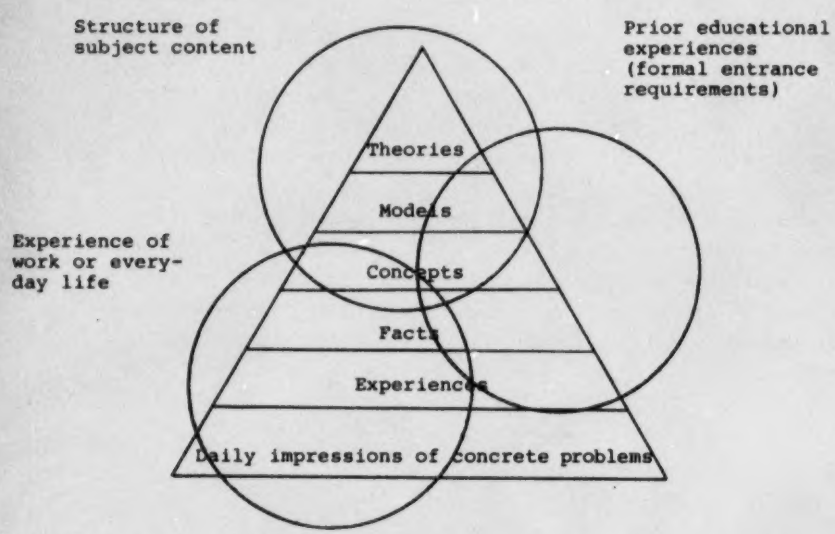


Figure 5:3. A comparison of work experience, formal entrance requirement and subject knowledge.

Experience is in the lower left-hand circle: the stress is on experiences, facts and concepts. Prior educational experiences as they are evaluated in the admission system are represented by the lower right-hand circle with an emphasis on facts, concepts and models. Academic knowledge is described by the uppermost circle and is dominated by theories, models and concepts.

The figure aims at describing the main characteristics of three

different types of knowledge. The overlap of the three circles is an illustration of our theoretical ideas concerning interchangeability. If the two lower circles coincide completely strict interchangeability can be considered to exist. If they overlap partially the principle of relative interchangeability is valid. If the circles are separate from one another there is no interchangeability.

Our main concern is the relation between formal entrance requirements and work experience. Therefore, it ought to be emphasized that interchangeability in our analysis is to apply in relation to the requirements formulated in a certain subject or study programme. Work experience has not primarily to replace academic knowledge but should, rather, provide a general platform for academic studies. So the problem differs from the American discussion on experiential learning, which is concerned with measuring the content and quality of the student's life experience from case to case in order to give credits for experiential learning or guidance on the individual's choice of course content and level.

Earlier in this paper we defined study aptitude as,

a) intellectual qualifications,

b) study experience and study methods and techniques,

c) background knowledge in specific subject areas.

Together these three factors can be said to constitute the study competence necessary in order to be able to pursue academic studies. These cognitive aspects cannot, however, be isolated from social and psychological motives. On-the-job learning develops social competence and often shapes a good motivational background for academic studies. Consequently the analysis will be incomplete if we only discuss the interchangeability of background knowledge and work experience.

An overall view of learning demands that the following factors

are taken into account:

1 Social competence and motivation for learning

For the young student prior work experience can be seen as a way of breaking out of theoretical isolation. According to the Swedish discussion working before going on to academic studies should also lead to more clarity of study and vocational choices and better motivation for learning. For older students occupational experience and the link with experiences they themselves have had at work may increase their interest in and commitment to their studies. However, the differences in motivational factors between younger and older students are not absolute.

On-the-job learning is learning in co-operation. Concrete problems must be solved and this trains the individual's ability to function in a group. Consideration of colleagues, family and friends also requires the effective use of time. Really, it goes without saying that different individuals develop these characteristics in different ways. In addition, group situations in academic studies often do not resemble job situations. It is possible that the adult students' social competence may be underdeveloped in the sense that they have not learned to make demands in their studies. Sometimes they develop, instead, a tendency to submit completely and humbly to the demands and proposals formulated by their teacher.

2 Knowledge of society and working life

Through informal learning in working life, organizations and the family the adult student has acquired a knowledge of society and the realities of family life which constitutes a frame of reference against which the knowledge content of higher education can be tested. The individual's possibilities of examining critically different theories

and concepts are enhanced by concrete experience from fields in which the theories can be applied. Informal learning also contains a not inappreciable measure of concept formation and of the application of special occupational codes or languages.

3 Study skill and theoretical background knowledge

Recent research in the field of university teaching indicates considerable difficulties in developing a general concept of study skill. It does not seem to be fruitful to talk in a general sense about aptitude for academic studies or about study skill at the higher education level. The concept of study skill must be related both to the individual's study style and to the character of the subject content.

Analogously it is difficult to develop a general view of study technique. The individual student's study technique must be seen in relation to his own expectations of his studies, i.e. his internalization of his learner role, to his previous study experience and to subject content.

Of course, the importance of theoretical background knowledge varies from subject to subject. In subjects where the knowledge of certain items, ideas or concepts is a necessary condition for further studies, e.g. mathematics or languages,the problem of substitution is more accentuated than in subjects with a broad and general content.

Does learning through experience develop a general aptitude for academic studies? The question cannot be answered by a simple yes or no. Obviously, all learning through experience does not lead to a general competence for academic studies. The answer can be a relative one, i.e. some forms of learning through experience (experiential learning) develop a general study aptitude. More generally, it is neither an ideological nor a theoretical question, but an empirical one. A conclusion

from this is the American discussion on experiential learning and the assessment of experience also has a bearing on the European models for the utilization of work experience.

5.4 Organizational Frames and the Utilization of Work Experience - A System Perspective

The possibilities of making use of the students' work experience are not solely a question of how instruction is planned and what possibilities the students themselves are given to influence their studies. The basic conditions are produced by the goals, orientation and organization of the university and college system as such.

Earlier in this paper we outlined three models or functions of work experience in admission to higher education, viz. a) alternative route, b) additional qualification and c) compulsory requirement. These three functions can be related to different system characteristics such as professional orientation vs academic orientation, single or short-term courses vs whole study programmes etc. In our analysis we prefer to make a distinction between three kinds of educational forms, namely short-time courses, professionally oriented study programmes and academically oriented study programmes, which is illustrated in the following matrix:

	Model I Alternative route Route	Model II Additional qualification	Model III Compulsory repuirement
A Short-time courses (Separate courses, non-credit courses etc)			
B Professionally oriented study programmes (Community colleges, Poly-technics etc)			
C Academically oriented study programmes (Conventional universities)			

Figure 5:4. The function of work experience in different educational contexts.

As usual a matrix is an oversimplification of reality. Some of the combinations exist in the world of higher education, others are still models or ideals in the heads of policy-makers. In Sweden work experience is both an alternative route and an additional qualification. The idea of compulsory requirement is only used within the experiment with study programmes of advanced vocational technology. In other countries it would be a dramatic change and challenge for the systems of higher education if work experience was made a compulsory requirement for study programmes with a more traditional academic orientation.

We take it for granted that the distinction between professionally and academically oriented study programmes or systems of higher education is critical where the use of work experience is concerned. There are different reasons for this. First, work experience and practical knowledge of a certain job can be integrated more easily in professionally oriented programmes.

Second, professional programmes aim at applying concepts and models to concrete job situations. Third, it seems likely that work experience can more easily be a substitute for formal entrance requirements in professional programmes than in programmes stressing academic values.

It is self-evident that the effect of work experience in the educational process will vary with the type of experience the students have and the organizational and instructional restrictions for using the experience in the learning process. The opportunities of making use of actual experience seem to be greater in model I A and III than in model II. The arguments for this are as follows. In the Open Access model (Model I) a considerable proportion of the students have the same background in the sense that they have acquired their knowledge in an informal study tradition: both by learning at work and through courses of different kinds. On the other hand, this experience may have been acquired in a number of different fields. The possibilities of making use of work experience are enhanced because the course of study is directly designed to meet the needs of this group.

The problems are considerably greater in Model II A (and of course, II B+C) where the study programmes are designed not only in relation to students with mainly work experience but also - and primarily - for students who meet the requirements of theoretical background knowledge. As many adult students both have the formal entrance requirements and prior academic studies,the difficulties for students who mainly have work experience may increase. Some general observations from different quarters seem to indicate that students with work experience have difficulties in certain professional study programmes, e.g. medicine, in Sweden. However, more detailed studies are not yet available.

It also seems reasonable that the possibilities of making use of work experience in the educational process are enhanced in instances when the spread of background experience is not ex-

cessively wide. In the light of this, the possibilities of using professional experience of relevance in Model III A+B seem good. Results from the experiment with study programmes of advanced vocational technology (YTH) in Sweden seem to support this line of argument, even if the intrasector variation of a certain kind of professional experience can be marked.

Pedagogically this can be explained on the basis of assumptions about homogeneous and heterogeneous groups. It goes almost without saying that groups which are excessively heterogeneous with respect to experience of different kinds, theoretical background knowledge and study skill create problems in the learning situation. Irrespective of whether it is delivered in traditional academic teaching or by means of problem-oriented project work, the curricular content cannot meet the needs of all groups simultaneously. The teacher or supervisor is often unable to maintain an effective interaction with all the participants. The greater the differences in the students' backgrounds and study experience, the more difficult it becomes to adapt tuition to several groups at the same time.

In the interaction between teacher and students one group - the steering group - is favoured at the expense of the other students. In Models I A+B and III A+B there seems to be a relatively good chance that adult students can become the steering group. In the mixed model, however, it is more likely that a sub-group of traditional students will constitute the steering group. In Models I and III an external homogenization of the students has taken place: in Model I because they have applied to a particular type of course, in Model III because selection has crystallized out students with a particular occupational background. In the case of no external homogenization it seems reasonable to suppose that an internal homogenization or a differentiation of courses and levels will develop informally within the educational process. Students with different patterns of work experiences, theoretical background knowledge and study skill will be stratified in different ways.

One of the intentions of this paper is to analyze the possibilities of making use of the students' work experience in higher education. It is not particularly daring to hypothesize that the students' experience is not made sufficient use of. There is a lot that suggests that academic knowledge still predominates strongly over the students' own experience - particularly for students on general study programmes. Another important control factor which we have not discussed previously is the design of the examination system. Even if group and project studies give the opportunity of making use of experience, it seems as if the examination system only offers very limited scope for the assessment of experience.

Our assumption that experience is only used to a limited extent must be qualified by specifications of what we mean by making use of experience. There is, in sectoral research today, an orientation which makes a special study of knowledge utilization in planning. Certain writers in this orientation speak of a 'utilization crisis'. Perhaps the problem is the same but the other way round concerning work experience. Maybe we are faced with an 'experience utilization crisis in academic teaching'. However, the crises develop in this field it is necessary to specify what we mean by making use of the students' work experience. This utilization of work experience probably takes place in different ways and can have both surface and deep effects. If we divide it into individual, collective and institutional utilization and separate surface and deep effects we get the following matrix:

EFFECT LEVEL	ACTOR LEVEL: Individual	Collective	Department/ Institution
Surface level effects	Observable links between subject content and experience at the individual level.	Observable spreading of experience in the teaching groups.	Better links between subject content, instruction, and the students' experience. Planning for educational adaptation to heterogeneous groups.
Deep level effects	Profound changes concerning conceptions, identity, skill, which all are difficult to measure.	Profound changes in the group e.g. the influence of the teaching climate and subject content, informal selection.	Contributions to the institution's own development of knowledge, broadening of frames of reference, new contacts/alternatively confrontation with traditional knowledge ideals, identity conflicts within the subject/department.

Figure 5:5. Matrix of different ways of analyzing the utilization of work experience in instruction.

The matrix hints at the considerable methodological problems we face when we try to analyze in what way the students' work experience is or can constitute a resource for higher education. Obviously it is insufficient to focus solely on measureable surface effects of the type 'such and such a number of students say that they have been able to use their work experience in such and such a number of situations'. The alternative of trying to describe how the encounter of different knowledge traditions turns out is methodologically much harder. On whose conditions does the encounter take place? What chance does experience have against academic knowledge? How are teachers and institutions on the whole influenced by this situation?

5.5 The Adaptation to New Learners - Structural and Didactic Aspects

The question of how the content and organization of an education are to be adapted to the students' varied qualifications is hardly a new problem in the educational arena. In his book 'Adaptive Education: Individual Diversity and Learning' Glaser (1977) writes thought-provokingly:

> The fundamental educational task is to design settings for education that are flexible and adaptive enough to handle these differences which derive from an individual's cultural milieu and his or her own uniqueness among other human beings. An educational environment that is not capable of adjusting to these differences inhibits the development of individual potential, becomes elitist and selective, is heavily biased toward the mainstream culture, and perpetuates inequality. When awareness of this fact has risen to a conscious level, educational research and suggested reform have focused on attaining the ideal of education adaptive to individual learners. Attempts to achieve this ideal have been made in one way or another and for better or for worse.
>
> Glaser (1977) pp 1-2

The book is mainly about adaptational processes at comprehensive school level, but in principle it is of significance even for higher education. One of his purposes in the book is to replace selective strategies with adaptational ones where study organization, working methods and content are developed so that it is possible at one and the same time to meet the needs and wishes of different groups with different needs and qualifications. "In principle, there seems to be no reason why educational environments cannot be designed to accommodate to variations in the background, talents, and other requirements of learners." (Ibid p 17) Glaser presents and discusses five different models for such an adaptation:

1. Model one: Selective with limited alternatives
2. Model two: Development of initial competence
3. Model three: Accommodation to different styles of learning
4. Model four: Development of initial competence and accommodation to different styles of learning

5. Model five: Alternate attainment possibilities

To present the different models in detail would be to go too far in this context. In the first model severe selection is applied at admission. All those who do not meet the basic requirements are shut out. In the second model there is the opportunity for those who lack the necessary initial competence to supplement their competence. There is, however, only one standard design of the educational programme. Model III, on the other hand, is a manifestation of an adaptational educational strategy in that it contains several parallel learning opportunities for students with different qualifications and study skill. Model IV is a combination of II and III and contains both individual study-supportive measures and educational adaptation of the study programmes. In the fifth model, which is the most adaptive, there are, in addition, different possibilities of achieving results within the same study programme.

Glaser's analysis can very well be applied to the Swedish higher education reform, which is an attempt to go from a selective strategy to an adaptational one. It can also be used to examine in more detail how the higher education system has tried to develop methods for meeting new student groups.

The international discussion on ways of meeting the needs of new learners has been focused to a great extent on different educational structures. Should the needs of non-traditional students be satisfied within traditional structures or existing institutions? Or should we develop new educational structures to meet the needs of the new student clientele? Today we are facing a great variety of different educational structures in the post-compulsory area. The Swedish idea of a unified system of higher education is a rather unusual solution to these problems. Another more common organizational pattern is to develop binary systems or special structures of courses for certain groups, e.g. non-traditional students, disadvantaged students, etc.

Experience from Sweden and elsewhere indicate that new groups of students are mainly recruited through courses of study whose

goals, content and educational design are directly adapted to them i.e. through what we called external homogenization. Thus there is a triangular relation between content, form and the qualifications of the target group. The analysis could be illustrated with examples from different courses of study but we confine ourselves to the following figure:

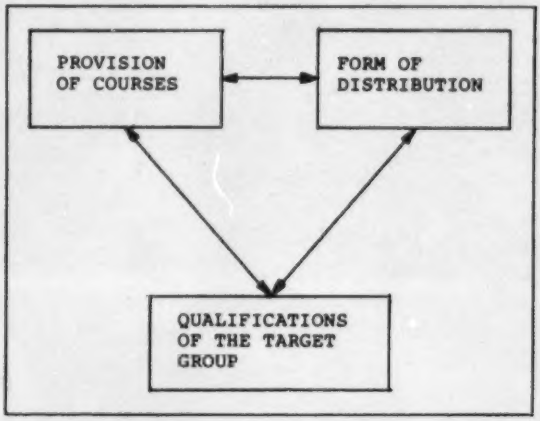


Figure 5:6. The structural triangle.

This simple model - the structural triangle - aims mainly at indicating certain fundamental factors in an explanation of the recruitment of new groups of students. The Swedish experience includes both a number of single courses with vocationally oriented content (e.g. health service administration, administrative techniques, industrial law and environmental problems)and the experiment with study programmes of advanced vocational technology (YTH). Broadly these correspond to two types of education, models I and III in the description of different ways of recognizing work experience in higher education given previously. It appears that the attempts to recruit new groups have been most successful in zones of transition to other education systems. This is true of some of the vocationally oriented courses named above but it is also true of courses bordering on the activities of the adult education organizations and on the Trade Unions' in-service training.

The structural triangle has its counterpart in the didactic triangle viz. the interaction between subject content, working methods and study skill. When we say that content and working methods must be adapted to the adult student's needs and qualifications we are moving in just this triangle. The pedagogically interesting question arises when we can register study difficulties for new students in their encounter with relatively traditional academic content.

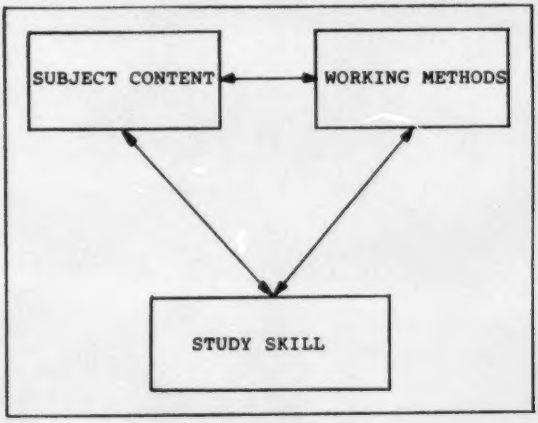


Figure 5:7. The didactic triangle.

How should an imbalance between, on the one hand, subject content and working methods and, on the other, the individual's study skill be solved? In principle there are three different solutions here, viz. organizational, didactic and individual.

We have already dealt with several different types of organizational solutions in this paper. For instance altered selection rules or changes in the admission system. We have also mentioned complementary studies and preparatory courses. Other solutions are found in the discussion of the organizational triangle, i.e. the adaptation of educational provision and distribution form to the qualifications of the target group.

We must illustrate more clearly how the organizational frames

can be altered to improve the student's study situation. The most important intervention is not in the educational process but in the external conditions for the individual's studies, viz. the social setting and financial conditions. Insufficient financial aid for studies obliges many students to combine part-time studies with work. Admittedly this system can have many advantages - continuous feedback between work and studies, for instance - but at the same time it often leads to a heavily strained time budget with study stress and few opportunities for deeper study outwith the prescribed area of knowledge.

Another important aspect of educational adaptation is the analysis of the teacher's own experience outwith the education system.

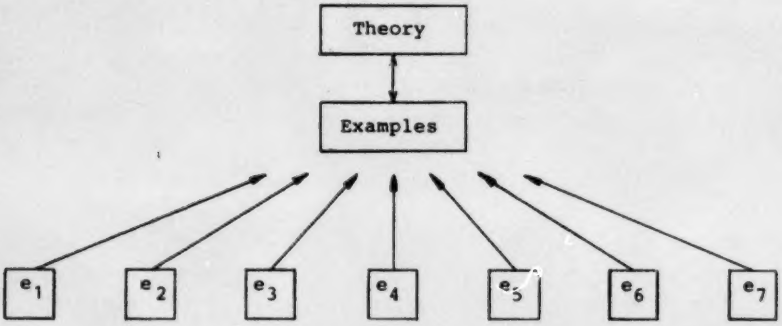


Figure 5:8. The interplay of theory, examples, and experience.

In the instruction the teacher is the bearer of theories and examples to illustrate the theories. The teacher's task is not simply to explain the content and logical coherence of the theory. Preferably he should also demonstrate the theory's application in practice. He can, however, choose more or less fictitious examples to illustrate his thesis. The more isolated the teacher himself is from professional life and society in general, the greater is the risk that the examples will be fictitious or special. If he meets, in this situation, a group of students who perceive themselves as the bearers of more

relevant examples a confrontation arises. From the students' pool of personal experience a new, more fruitful example can be produced; this, in turn, gives rise to a more dynamic relation between theory and practice.

Group-oriented methods in the studies are a necessary but not a sufficient condition for being able to make use of experience. Nor can the goal be to make use of experience as such; rather it should be to create situations where the links between experience and subject knowledge are most constructive. Here we are confronting a difficult criteria and balance problem where the development of a learning environment which can promote such an interplay is concerned. The demands on the teacher's or supervisor's sensitivity to such links between experience and subject knowledge create completely different didactic problems from those created in a situation where only the transmission of subject knowledge comes into focus. An analysis of the possibilities of making use of work experience on different courses of study should not, therefore, be carried out without regard to how the frequency of teaching contact has developed on these study programmes.

Another decisive factor is the outlooks and values which direct the educational design of a specific study programme. To whom or to what groups has the tuition actually been adapted? For traditional student groups who have completed upper secondary school? For new students with a rich store of experience but sometimes with insufficient study experience? Or for colleagues in the department or for the subject as a whole? It is just as important to know what we mean when we say that our pedagogics must be altered to meet the needs of the new groups of students. Do we mean a change of teaching forms from lectures and tutorials to group studies and project work? Or do we have a decisive change in academic knowledge content in mind? There is of course a critical policy issue here: if the adaptation to new learners should start from a certain academic standard (i.e. the notion of "high culture"), or if the changes imply a new conception of knowledge content in higher education. Do we mean the same sort of knowledge in new clothes or

do we also have a change in subject content in view? There is, here, a great variety of unanswered questions concerning changes in higher education to meet the needs of new groups.

In the handbook 'Developing the college curriculum' Bergquist (1977) discusses eight different curriculum models, viz:

1) Heritage-based programmes

   These programmes focus mainly on the students' social and cultural background. They can be compared with the Swedish attempts to study the collective's history according to the 'Dig where you are' method.

2) Thematic-based programmes

   The thematic-based programmes start from important social problems rather than the division of knowledge into disciplines at the universities.

3) Competency-based programmes

   The starting point here is certain competence levels specified in advance which the student is to achieve in the subject of the programme.

4) Career-based programmes

   The purpose of these programmes is to prepare or qualify students for a particular professional career or post on the labour market.

5) Experience-based programmes

   These programmes build on experiential principles; they start from the students' life and work experience. An important distinction here is between <u>experience-based learning</u> and <u>experience-related learning</u>. In the first case learning builds on the students' experience;

in the second case their experience is used to illustrate the problems elucidated in theories and models.

6) Student-based programmes

In student-based programmes the students themselves have considerable influence on the knowledge content, working methods, and examination modes. Problem- and project-oriented instruction is an example of student-based teaching even if the method as such can take different forms.

7) Values-based programmes

The purpose of this form is to give the students the capacity to elucidate values and issues in questions of a social, political, and religious character.

8) Future-based programmes

In this form, finally, the task is to produce knowledge which can be used both to understand and to shape the future in broad social issues as well as in concrete questions concerning the individual's problems and life.

Obviously work and life experience have different roles in the various programmes. The experience-based and student-based programmes build to a great extent on the students' own individual experience. If we want to broaden the perspective the heritage-based programmes also acquire great importance, since they focus primarily on transmitting the collective an tradition of knowledge. To quote the above-mentioned report it is to a great extent a question of 'how general or specific the curriculum should be (ibid p 83) and 'to what extent the curriculum should be prescriptive or elective with reference to the role played by the students' (ibid p 84). The question concerns not only how the students' experience can be related to the subject content but also in what ways study programmes

can consciously be planned to make use of the students' work and life experience.

How can educational design be altered so that the demands better meet the needs and interests of new groups? Theoretically we can think of varying working methods from understructured methods to overstructured methods. In the first type of method the student is given a great deal of scope for activity either in the form of active participation in group studies or project work or in the form of supplementary self-study. In the second type of method the different stages in the learning process are clearly laid out and arranged in steps so that earlier parts must be completed before the student can proceed to the next stage.

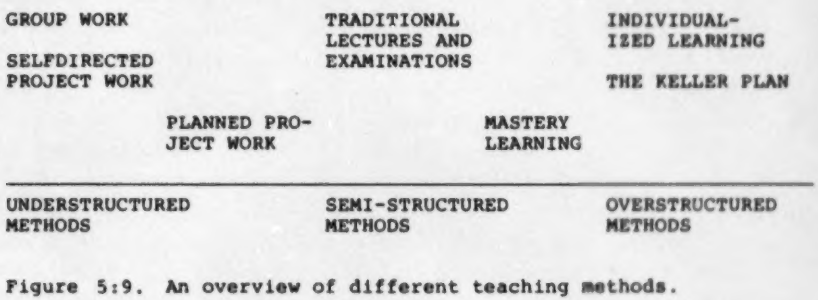


Figure 5:9. An overview of different teaching methods.

It goes without saying that in overstructured methods there is very limited scope for making use of work experience. For this to take place the student must have the opportunity of participating in the design of his study task. Excessively rigid educational design may create obstacles to the exchange of experience in the teaching process. In the light of this it is interesting to study Cross' (1976) pedagogical prescription for new student groups.

> "The research to date indicates that a promising approach to working with New Students would be to design clear, strongly structured learning tasks that can be pursued jointly by several students or by groups of students working together toward common learning goals. The clear delineation of the task plus the social support of other

people seems to be a potentially powerful combination of forces for field dependents."

Cross 1976, p 131

Thus the modernization of the pedagogics of higher education which is sometimes advocated by the supporters of problems and project oriented work can create difficulties for the new student groups with insufficient study methods. Such an open learning method has engaging characteristics: opportunities to influence the disposition of one's studies, adjustment to study skills and the exchange of work or life experience. Obviously it is also a method with considerable risks if attention is not paid to the students' level of background knowledge, experience and study methods.

In many instances inadequate organizational or didactic solutions result in the student himself redressing the imbalance in his study situation. A solution near at hand would be to increase the time for study work. In fact, many adult students devote more time to their studies than younger students on the same course. However, this solution is inadequate from at least two different points of view. First, the available extra time for studies is restricted for adult students. Second, it might be so that there is a limited degree of interchangeability between learning from teaching and self-study for adult students with limited experience of formal schooling. These students cannot compensate unsatisfactory inside classroom learning with increasing hours of outside class learning or self-study. In concrete terms this means that the individual student must pay for an unsatisfactory development concerning both didactics and organization. In some instances this leads to drop-outs, in other the student may be gradually socialized into a failing role with a high risk of dropping-out.

5.6 Individual and Institutional Responses to Imbalance

Obviously, this phenomenon implies a change in the selection process and also in the type of selective determinants. The selection at entry through the admission system has turned into

a selection in process or a selection by failure (Cerych, 1978). The internalization of the new self-selective role is both a challenge and a risk for adult learners embarking on a study project in higher education.

A characteristic of the Swedish higher education system in a contrast to some parts of higher education in the US or the Open University in England is relatively weak steering and controlling mechanisms concerning the individual's study and subject choice. The admission system gives the student relatively large freedom of choice within the limits of general and special entrance requirements. Information and guidance are resources put at the disposal of students interested in them but they are not particularly closely integrated with tuition and studies. Diagnostic guidance and tests of background knowledge are only used to a limited extent. Nor are there many study supportive measures for disadvantaged groups. Generally speaking, the same courses are attended by all students admitted to a certain subject. Thus there are no special courses for adults. The two-edged result of this is that the responsibility for success or failure in the learning process is left in the hands of the adult student.

The transfer of the selection process from organizational and pedagogical factors to the student himself has, of course, the advantage that everyone who is interested has the chance to see if he succeeds with academic studies. But a disadvantage can be that many people enter higher education without really having the necessary qualifications. This can lead to difficulties, failure and drop-outs. Yet another risk in making the individual himself responsible for selection is the increasing difficulties of seeing what factors really direct the elimination of students in the educational process. The system can develop what Clark (1960) has called '<u>a cooling-out function in higher education</u>', i.e. students are not rejected in open competition with other students, but instead meet hidden and informal forces.

The stress on work experience in the educational process is

only one of many new claims on the systems of higher education. It is still an open question in what respects and under what conditions such an adaptation develops. Further studies on the relation between curricular content, working methods and study skill are necessary. Insufficient organizational or pedagogical measures will put heavy stress on the individual adult learner. The different patterns of individual adjustment to imbalance must be clarified. Such a clarification must also be related to the objectives and functions of higher education. It is naive to presume that an open door policy implies an educational responsibility for all individuals in society. Imbalance at individual or institutional level must function as a policy stimulus at all levels of the system.

An immediate conclusion of the analysis of the exclusion of new students would be a call for more structured teaching methods in the form of less independent and more individualized learning. Such a policy conclusion would, however, be too superficial a way of looking at the problems. Instead of labelling some non-traditional students as disadvantaged students it is necessary to see them both as risk-students and resource-students. The educational design must not only give the right treatment of their roles as risk-students, but also create learning conditions that facilitate their roles as resource-students. The consequence of this is more structured teaching methods in some parts of the course, and more open learning in other parts. The crucial policy issue here is to what extent different institutions of higher education can cope with both sides of non-traditional students. Obviously, excessively heterogenous systems will have enormous problems with this educational challenge.

From a theoretical point of view it is possible to sketch out some different methods of coping with imbalance at the individual level.

A. Withdrawal from learning I: leaving the stage

To many new learners the meeting with the universities could be quite a shocking event. Such an experience of imbalance often leads to drop-outs. A number of adult students in Sweden who showed interest in a special course never appear in the classroom. To a large extent such a withdrawal, however, seems to be a rational solution from the individual's point of view.

B. Withdrawal from learning II: routinized learning projects

Another method of withdrawal from learning is to adapt rigidly to the educational routines proposed by the teacher. Such an one-sided adjustment to the social construction of the teaching process means that the adult student does not take the opportunities to use his work experience in the educational process. He is not expected to be the resource person often invented in policy proposals or higher education rhetorics.

C. Development of effective learning I: individual work

The individual study activity is a central part of the learning process. Necessary conditions are that the imbalance is eliminated and that the curricular content is related to the learner's experience and background. An important condition for the individual's study activity is the clarification of study motives and learning style, e.g. through the technique of cognitive mapping.

D. Development of effective learning II: group work

A necessary condition for a mutual exchange of experience is that the studies are organized through group work, e.g. project methods. The projects must, however, be related to the heterogenity of student background, cognitive styles and study experience.

E. Claims for system changes I: individual solutions

Another way of coping with experiences of imbalance is to stress the need for change in the conditions for learning, e.g. counselling or study advisory services. The adult student can also ask for support concerning study methods, ways of analyzing the curricular content, study planning etc.

F. Claims for system changes II: collective solutions

Individual actions will be more successful if they are supported by other students. Sometimes adult students organize themselves within a certain course in order to stress the need for institutional adjustment to their needs and interests.

The individual styles of adaptation cannot be discussed in isolation from the institutional styles. On the contrary, the institutional frames determine to a large extent the free space for individual adjustment. In this perspective it is necessary to relate the system of higher education to other educational institutions in society. Our focus on system relations is primarily motivated by an interest to see how changes in admission requirements influence these relations. To be more concrete: to what extent do changes in requirements such as increasing value for work experience influence the students choices of study programmes and their consciousness of the need for study preparation and planning. If the changes in admission requirements (i.e. the up-grading of work experience) are made without sufficient knowledge about possible effects on recruitment and enrolment, it is likely that the degree of uncertainty and imbalance in the system will increase.

5.7 Selection, Adaptation, and the Values of Higher Education

Let us, finally, link this discussion to Glaser's five models of selective or adaptive strategies in education. The problems

in the Swedish higher education reform are first, that we do not have a clear picture of whether work experience guarantees the initial competence and, second, that we do not know how adaptive the higher education system is in order to be able to function in relation to different groups' qualifications, experience, and needs. Nor do we know whether the moderators between different routes to higher education and the demands of higher education function well. The problems are illustrated by figure 5.10 below.

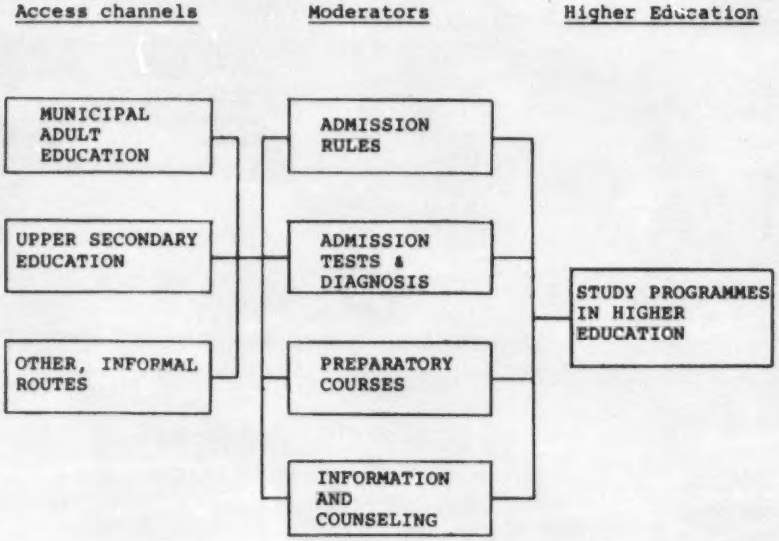


Figure 5:10. Adaptive mechanism in the connection between higher education and different recruitment channels.

To a great extent the question of selective and adaptational strategies depends on the fundamental goals and values in the university and college system. How different adaptational alternatives are designed will depend on how the notion of high culture is perceived. Another decisive question in our analysis

is how to measure the initial competence level. Swedish higher education has a system for central admission in which school grades, work experience and the higher education apitude test are weighed together administratively. In some North-American efforts to give credits for life experience attempts are being made to develop different techniques of illuminating the student's qualifications profile in greater detail. Despite extensive educational research our knowledge about the role of school grades as a predictor of study results is insufficient. It goes without saying that our knowledge about work experience as a prognosis factor is even more limited.

One of the main ideas in our paper is that there is no strict interchangeability between theoretical background knowledge and work experience. As a policy consequence Open Door reforms must be planned in relation to the realistic conditions of successful study projects for different kind of learners. It is necessary to pay special attention to different kinds of system moderators (e.g. preparatory courses, tests, training programmes etc) in order to avoid student impressions that studies in higher education are undemanding and easy.

The individual styles of adaptation must be related to the institutional styles. From the institution's point of view there are a number of different ways of coping with this problem. These different patterns of adaptation can be labelled organizational and didactic homogenization. The measures taken can be more or less active. The planning problem as it could be experienced in the planning process, can therefore be described in the following matrix:

STRATEGY OF ADAPTATION

DEGREE OF INTERVENTION	ORGANIZATIONAL	DIDACTIC
ACTIVE	Defining objectives, target groups, admission tests etc, selective measures	Internal differentiation e.g. division of groups, supportive measures
PASSIVE	Developing general study programmes for an undefined clientele, unselective measures	Mixed forms of instruction, hidden stratification, steering-group behavior

Figure 5:11. Strategies of adaptation (homogenization) and degrees of intervention.

The strategies used to cope with these problems differ from system to system. Values and traditions within the systems define the limits for using certain kinds of strategies. Of special importance in this case are the conditions for developing different strategies of homogenization within an integrated system of higher education, e.g. the Swedish system of higher education.

As a general conclusion on the educational function of work experience it is necessary to stress not only the educational structures and organizational frames, but also the critical role of the knowledge traditions and paradigms in different subjects. Many of these ideals are internalized in the minds of the participants in the academic society. An adaptation of the systems of higher education to new learners is to a great extent a question of adapting the university teachers to the needs, problems and study settings of a more heterogeneous student population. Obviously, the adaptation of an individual university teacher involves not only his general working conditions (e.g. evening classes, changes of curricular content,

forms of examinations etc), but also - and just as much - his professional identity as far as academic ideals, research interests and basic institutional values and norms are concerned.

6 SUMMARY

During the seventies repeated recommendations have emanated from different international bodies - UNESCO, for instance - that eligibility and selection rules for higher education must be chosen so as to give adult students real possibilities of gaining admission to various programmes of higher education. A practicable route which has been pointed out is that work experience could be taken into consideration in the rules for admission to higher studies. However, we must begin by noting that this has only taken place on an appreciable scale in very few countries.

Reasons offered for paying increased attention to work experience are that this would give economic, redistributive and pedagogical gains. In recent years a new factor - the demographic argument - has come up in the debate. To cover the shortfall of traditional students the universities are expected to try to recruit new categories of students; these must be drawn mainly from groups already in working life.

When we view the motives - as they are presented in official documents - we should be aware of the fact that overall goals of educational policy, as they are formulated by Parliament and the Government, are expressions of a political will. Characteristically these goals are vague and often contradictary. Thus when the idea is implemented at the administrative and productive levels it is often discovered that the real implications are not sufficiently clarified and that the necessary preconditions are not always fulfilled. As a result of the vagueness of the concept there might be a tendency at lower levels to give old procedures new names so that they keep better time to the new tune. Another general phenomenon is that, at the level of general policy, there is a view that every conceivable shortcoming in the system can be solved with the aid of one and the same measure. A good example of this is the principle of recurrent educa-

tion which has come to be regarded as a universal remedy for a succession of the problems the education system is wrestling with, no matter whether they concern unemployed 16-19 year olds, undergraduate education or postgraduate training. The same can be said to be true of the role of work experience - a vague concept - in higher education.

Definitions and interpretations vary not only in different countries but also in one and the same country. In the present report we have chosen to distinguish between relevant professional experience, work experience in general and life experience. The measures taken within the education system depend, of course, on the kind of experience sought.

What has been learned up to now in Sweden - one of the few countries which has introduced work experience as a qualification for academic studies comparable to school grades in a formalized and uniform admissions system - points to the difficulties in fulfilling the intentions of the educational policy. Among the results have been a considerable rise in the average age of admission to selective study programmes and a dramatic increase in the number of part time students; students who often have limited study goals. Thus higher education has acquired increasing importance as a source of further education and training. As always, however, it is the privileged and, most often, well-educated who make use of the new opportunities. Even if we are cautious about drawing far-reaching conclusions from the short period the new rules have functioned evaluations point to the difficulties in achieving both equalization between generations and within a generation.

One of the difficult issues concerning the substitution of work experience for upper secondary school education has to do with the aspect of quality. This applies particularly to countries like e.g. Sweden where admission and selection have traditionally taken place on the basis of upper secondary

school grades and where a negative attitude has been adopted to tests as a selection criterion. If the idea of testing an individual's real competence by means of some form of assessment is rejected it is necessary to decide what jobs could constitute a substitute. For practical reasons there seem to be only two possibilities. Either eligibility is limited to some carefully defined occupations or all forms of work experience are recognized. This means that the selection process is shifted from admission to the educational situation, a change which must, of course, affect the instructional process.

Naturally, both the desired and the undesired consequences of according work experience increased significance must be considered against the background of the goals of higher education as a whole. Ultimately it is a question of what role higher education should play in society. Shall higher education continue to incorporate educational programmes traditionally not given at colleges and universities and award credit for items that could be learned outside college walls? Or shall it aim more at traditional academic studies at a level not possible to pursue outside the walls of higher education?

One of Martin Trow's theses is that reforms within higher education seldom lead to one form (elite, mass, universal system) replacing another but that different forms will exist side by side in one and the same education system (Trow, 1974). However, an important task for future research is the study of whether and, if so, how the new opportunities for adults to pursue higher studies influence the educational and occupational choices of the young. Moreover we can assume that rules of the kind developed in Sweden, where adults are favoured, are going to evoke new conflicts. It is no longer only a struggle between different social groups; now the young and old are being set against one

another in a completely new way. In a future where the economic resources available for higher education are more likely to decrease than increase policy-makers will be confronted with difficult questions concerning the allocation of priorities. Accordingly a system of recurrent education with its increased emphasis on work experience cannot develop in some form of 'harmony model' but must inevitably lead to increased tensions.

When we scrutinize the role of work experience in the educational process, we must also try to grasp the essence of the concept of work experience. Obviously, it is a very general concept which is mainly trying to label an informal learning activity through direct and living contacts with social reality. Attention must be given to the educational consequences of a certain specification of the notion of work experience. Will the possibilities of using experience in the learning process increase if we specify the kind, level and content of work experience? Or will the educational benefits increase if we, as is done in Sweden, present a wide definition of work experience?

The specification problem must also be related to available assessment procedures. Interesting problems are raised in the American discussion on credits for life experience. The credentialism movement has led not only to the development of tests, assessment procedures and evaluation criteria, but also to new institutions with the purpose of evaluating prior educational experience or experiential learning. Other systems of higher education lack traditions of tests and assessment procedures. This results in difficulties in specifying experience from a functional point of view.

Inevitably the function of work experience is closely connected with the learning contexts of different educational structures. Institutions which are mainly oriented

towards traditional groups do not have the same possibilities of using experience as institutions with an educational design oriented towards new students.

Policy-makers in higher education often call for measures to develop educational structures or a provision of courses which can meet the needs of non-traditional students. Affirmative actions and outreach activities are seldom related to universities' or colleges' possibilities of coping with the problems and needs raised by new students. In the politics of higher education the adult student is often labelled a resource student. From an educational point of view he is as much a risk-student with latent motivation to withdraw if study problems become too difficult. It has been stressed that the new student needs a structured learning situation, where he can carry out his studies in collaboration with other students. An overstructured learning situation will, however, put heavy restrictions on the possibilities of exchanging experience effectively. Here we are facing the balance between open learning and structured learning conditions.

An immediate conclusion could be a call for more dependent and individualized teaching methods for non-traditional students with insufficient study methods and background knowledge. Such a policy conclusion would, however, be a consequence of an exessively superficial analysis of the problems. Instead of labelling some non-traditional students as disadvantaged students it is necessary to develop a human image, where the learner is a resource-student in certain areas (e.g. knowledge related to a certain profession, environmental conditions, negotiating procedures etc.) and a risk-student in other areas (e.g. languages, study skill, mathematics etc.).

The didactic methods used must give the non-traditional student not only necessary treatment in his role as a risk student, but also experience of functioning as a resource-student as well. The critical policy issue raised from this analysis is what kinds of educational structures and learning contexts will cope effectively with both sides of the learning roles of new learners. In the light of our own experiences and analysis it seems likely that excessively heterogenous and undifferentiated systems of higher education will fail to cope with this challenging task.

REFERENCES

Allen, R.A. (1973). Counseling for Lifelong Learning: Threat and promise. Paper presented at the Adult Student Personnel Association Conference. Washington D C, March, 1973.

Berg, I. (1970). Education and Jobs: The great training robbery. New York: Praeger.

Bergendal, G. (1978). Reflections on educational policy from an employment perspective - with particular reference to admission to post-secondary education. Paris: OECD, SME/ET/78.41.

Bergquist, W. (1977). Diversity in the College Curriculum in Quehl, G. (1977). Developing the College Curriculum. A handbook for college administration. Council for the advancement of small colleges. Washington.

Bowles, F. (1963). Access to Higher Education. Paris: UNESCO.

Boudon, R. (1974). Education, Opportunity & Social Inequality. New York: John Wiley & Sons.

Cerych, L. (1975). Access and Structure of Post-Secondary Education. From a Global to a Diffused System. Occational Papers of the Institute of Education of the European Cultural Foundation, Vol. 1, Amsterdam.

Cerych, L. (1978). Access to Tertiary Education in the European Member States of UNESCO. A Feasibility Study. Working document for the Second Consultation for the Preparation of a Study on Access to Higher Education in Europe. Mimeograph.

Clark, B. (1960). The "Cooling-out" Function in Higher Education. In Amer. Journal of Sociology. Vol LXV, No. 6.

Coleman, J.S. (1977). Differences between Experiential and Classroom Learning. In Morris T. Keeton and Associates. Experiential Learning: Rationale, characteristics and assessment, p 49 - 61. Jossey-Bass Publishers, London.

Cross, K.P. (1976). Accent on Learning. Improving instruction and reshaping curriculum. Jossey-Bass Publishers, London.

Cross, K.P. (1978). The Adult Learner. In Current Issues in Higher Education. Washington: American Association for Higher Education.

Dahllöf, U. (1977). Reforming higher education and external studies in Sweden and Australia. Uppsala Studies in Education 3. Uppsala: Acta Universitatis Upsaliensis/Almqvist & Wiksell International.

Denison, E. (1962). The Sources of Economic Growth in the United States and the Alternatives before Us. Paper No. 13. New York: Committee for Economic Development.

Department of Education and Science and the Scottish Education Department. Higher Education into the 1990's: a discussion document. February, 1978.

Dewey, J. (1971). Experience and Education. The Kuppa Delta Pi Lecture Series.Collier Books, New York, 1971.

Edholm, E. (1978). Arbetslivserfarenhet som ett led i lärares yrkesförberedelse. Rapport utarbetad på uppdrag av 1974 års lärarutbildningsutredning. (Work experience as a stage in the teacher's professional training. Report prepared for the Commission on the Education of teachers.) Stockholm: Liber förlag, Allmänna förlaget. Utbildningsdepartementet DsU 1978:2.

Eliasson, R. (1973). Undersökning angående antagningsbetyg, arbetslivserfarenhet och studieresultat. (A study of schoolmarks, work experience and achievements among students admitted to the Schools for Social Work.) Mimeograph, Stockholm, 1973.

Furniss, W.T. (ed.). Higher Education for Everybody. Issues and Implications. Washington, D.C.: American Council on Education, 1971.

Gage, N.L. (1972). Teacher Effectiveness and Teacher Education. The Search for a Scientific Basis. Palo Alto California: Pacific Books, Publishers.

Gesser, B. (1971). Rekrytering till universitet och högskolor i Sverige. (Recruitment to universities and colleges in Sweden.) I SOU 1971:61.

Glaser, R. (1977). Adaptive Education: Individual Diversity and Learning. Holt, Rinehart Winston, New York.

Hecquet, I.; Vemier, C.; Cerych, L. (1976). Recent Student Flows in Higher Education. A report of the Institute of Education of the European Cultural Foundation. New York, ICED, 1976.

Hopper, E.; Osborn, M. (1975). Adult Students - Education Selection and Social Control. Frunees Pinter, London, 1975.

Husén, T. (1969). Talent, Opportunity and Career. Uppsala: Almqvist & Wiksell.

Jones, H.A. (1977). Adult Access to Post-Secondary Education in the United Kingdom. Paris: OECD, SME/ET/77.31.

Kemp, G. (1977). Three Factors of Success in the World of Work: Implications for Curriculum in Higher Education. Paper presented at the Annual Convention of the American Association of Higher Education, Chicago, 1977.

Keochakian, S. (1978). Nonintellectual Factors in Admission. In Access Policy and Procedures and the Law in US Higher Education. New York: ICED.

Kerr, C. (1978). Higher Education: Paradise Lost? Higher Education No. 7, 1978, p 261 - 278.

Kim, L.; Simon, D. (1978). Urvalsreglernas effekter på rekryteringen till spärrad högskoleutbildning hösten 1977. (Effects of the new rules of admission in the autumn of 1977.) National Board of Universities and Colleges, Report No. 1978:6. Stockholm, 1978.

Kim, L. (1978 a). Försöksverksamheten med vidgat tillträde (25/5-regeln) 1969-1976. (The 25/5-scheme during the period 1969 -1976.) National Board of Universities and Colleges (NBUC), Report No. 1978:18. Stockholm, 1978.

Kim, L. (1978 b). Det danska tillträdessystemet - sett med svenska ögon. (The Danish admission system - from a Swedish point of view.) Mimeograph, 1978.

Kamiensky, A. (1975). Vuxenstuderande vid universitet (Adult Students at the University of Lund.) Mimeograph, University of Lund, 1975.

Kolb, D.A.; Fry, R. (1975). Towards an Applied Theory of Experiential Learning. In Gary Cooper (ed.) Theories of Group Processes. London/New York. John Wiley & Sons, 1975. Quoted from Chickering, A.W. Experience and Learning. An introduction to experiential Learning. Change Publication, 1977, p 17.

Levin, H. (1978). Workplace democracy and educational planning. Paris: UNESCO, IIEP/S44/3 (Prov.).

Ljung, B.-O.; Naeslund, J. (1973). Kan man sätta betyg på lärare? (Can we grade teachers?) Inst för pedagogik, HLS, 1/1973.

Löfgren, J. (1978). Yrkesteknisk högskoleutbildning 1975-1978. Erfarenheter från de två första försöksomgångarna. (Programmes of advanced vocational technology. Lessons from the first two experimental runs.) UHÄ-rapport 1978:21. Stockholm: UHÄ.

McClelland, D. (1973). Testing for Competence Rather Than for "Intelligence". American Psychologist, 28:1, 1-14.

Medsker, L.; Edelstein, S.; Kreplin, H.; Ruyle, J.; Shen, J. (1975). Extending Opportunities for a College Degree. Practices, problems and potentials. Center for Research and Development in Higher Education. University of California, Berkeley, 1975.

OECD (1977). Selection and certification in education and employment. Paris: OECD.

O'Toole, J. (1977). Work learning and the American future. San Francisco: Jossey-Bass Publishers.

Pantages, T.; Creedon, C. (1978). Studies of College Attrition: 1950-1975. In Review of Educational Research, 48:1, 49-103.

Rubenson, K. (1979). Högskolans anpassning till återkommande utbildning - förutsättningar inom och utom systemet. (Development of recurrent education - preconditions within and without the system of higher education.) National Board of Universities and Colleges (NBUC), Report No. 1979:1, Stockholm, 1979.

Rubenson, K.; Höghielm, R. (1978). Undervisningsprocessen och studieavbrott i vuxenutbildning. (The teaching process and drop-out in adult education.) Inst för pedagogik, HLS, 3/1978.

Sohlman, A. (1976). Utbildning och arbetsmarknad. Delrapport nr 1. Utbildningssystem, allokering, tillväxt och fördelning. De svenska erfarenheterna under 1900-talet. (Education and the labour market. Progress report 1. The education system, allocation, growth and redistribution. The Swedish experience in the 20th century.) Stockholm: Stockholms universitet, Nationalekonomiska institutionen.

SOU 1970:21. Vägar till högre utbildning. Betänkande avgivet av kompetensutredningen. (Routes to higher education. Report of the Commission on Eligibility to higher education.) Stockholm: Allmänna Förlaget.

SOU 1973:12. Försöksverksamhet med yrkesteknisk högskoleutbildning. Betänkande av 1968 års utbildningsutredning. (Experimental programme of advanced vocational technology. Report of the Education Commission of 1968.) Stockholm: Utbildningsdepartementet.

Squires, G. (1978). New Groups in Post-Secondary Education. Paris: OECD, SME/ET/78.42.

Teichler, U. (1978). Admission to Higher Education in the US. A German Critique. New York: ICED.

The Times: Higher Educational Supplement. 1977-04-15.

Tinto, V. (1975). Drop-out from Higher Education: A Theoretical Synthesis of Recent Research. In Review of Educational Research, 45:1, 89-127.

Trivett, D. (1975). Academic Credit for Prior Off-Campus Learning. Washington D.C.: American Association for Higher Education.

Trow, M. (1974). Problems in the transition from elite to mass higher education. In OECD Policies for higher education. Paris: OECD.

UNESCO (1968). Conference of Ministers of Education of European Member States. Vienna 20-25 November 1967. Access to Higher Education in Europe. Comparative background documents and report of the conference. Paris: UNESCO, 1968.

UNESCO (1974). Second Conference of Ministers of Education of European Member States. Bucharest 26 November - 3 December 1973. Final Report. Paris: UNESCO, 1974.

UNESCO (1978 a). Consultation for the Preparation of a Study on Access to Higher Education in Europe. Organized by the European Centre for Higher Education (Bucharest, 18-20 October, 1977). Summary of the discussion. Bucharest: CEPES, 1978.

UNESCO (1978 b). Second Consultation for the Preparation of a Study on Access to Higher Education in Europe (Paris, 17-19 April, 1978). Summary of the discussion. Paris: UNESCO, 1978. (ED78/CS35).

Öhrn, E. (1973). Enkätundersökning oktober 1972. Undersökningsrapport från Nämnden för socionomutbildning. (The 1972 follow-up study of students admitted to Schools for Social Work.) Mimeograph, 1973.